

FL 4 HR HIV COURSE

For Cosmetologists, Nail Technicians, Facial Specialists, and Full Specialists



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HIV/AIDS and Other Communicable Diseases (4 Hours)

Outline

- What is HIV?
- Modes of transmission
- Infection control procedures and prevention of HIV and AIDS
- Attitudes towards HIV and AIDS and appropriate behavior
- Other Communicable diseases: opportunistic infections

Learning objectives

- Define HIV
- Identify the three stages of HIV
- Detail how HIV is transmitted
- Describe ways to prevent the spread of HIV/AIDS
- Know how HIV/AIDS is treated
- Learn about other common communicable diseases
- Detail how to avoid transmission of other communicable diseases

Introduction

HIV and AIDS are commonly recognized terms. However, while many have heard of these terms, the stigmatization of HIV positive individuals paired with commonly believed myths and misconceptions surrounding the HIV/AIDS epidemic can influence behaviors when working with HIV positive persons. Learning about HIV/AIDS and recognizing commonly believed myths and misconceptions about the disease is important to professional cosmetology and the salon industry, as business is split upon customer relationships and the provision of quality and fair services to all customers.

What is HIV?

Definition of HIV

HIV is the acronym for human immunodeficiency virus. **It weakens a person's immune system by destroying important cells that fight disease and infection.** No effective cure exists for HIV but with proper medical care HIV can be controlled. Some groups of people in the United States are more likely to get HIV than others because of many factors, including their sex partners, their risk behaviors, and where they live.

Two strains have been identified: HIV-1 and HIV-2

HIV is a virus spread through certain body fluids that attacks the body's immune system, specifically the CD4 cells, often called T cells. Over time, HIV can destroy so many of these cells that the body can't fight off infections and disease. These special cells help the immune system fight off infections. Untreated, HIV reduces the number of CD4 cells (T cells) in the body. This damage to the immune system makes it harder and harder for the body to fight off infections and some other diseases.

Opportunistic infections or cancers take advantage of a very weak immune system and signal that the person has AIDS.

Where HIV Originated

Scientists identified a type of chimpanzee in Central Africa as the source of HIV infection in humans. They believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus, or SIV) most likely was transmitted to humans and mutated into HIV when humans hunted these chimpanzees for meat and came into contact with their infected blood. Studies show that HIV may have jumped from apes to humans as far back as the late 1800s. Over decades, the virus slowly spread across Africa and later into other parts of the world. We know that the virus has existed in the United States since at least the mid to late 1970s.

The first diagnosis of AIDS was June 5, 1981 and was a man from Los Angeles, California. In 1983 the Centers for Disease Control established the National AIDS Hotline to respond to public inquiries about the disease. January 7, 1983 was the first report of AIDS in female sexual partners of males with AIDS. September 9, 1983 the CDC identified all major routes of transmission saying that HIV is not transmitted through casual contact, food, water, air, or environmental surfaces.

Stages of HIV**Stage 1: Acute HIV infection**

Within 2 to 4 weeks after infection with HIV, people may experience a flu-like illness, which may last for a few weeks. This is the body's natural response to infection. When people have acute HIV infection, they have a large amount of virus in their blood and are very contagious. But people with acute infection are often unaware that they're infected because they may not feel sick right away or at all. To know whether someone has acute infection, either a fourth-generation antibody/antigen test or a nucleic acid (NAT) test is necessary. If you think you have been exposed to HIV through sex or drug use and you have flu-like symptoms, seek medical care and ask for a test to diagnose acute infection.

Stage 2: Clinical latency (HIV inactivity or dormancy)

This period is sometimes called asymptomatic HIV infection or chronic HIV infection. During this phase, HIV is still active but reproduces at very low levels. People may not have any symptoms or get sick during this time. For people who aren't taking medicine to treat HIV, this period can last a decade or longer, but some may progress through this phase faster. People who are taking medicine to treat HIV (ART) the right way, every day may be in this stage for several decades. It's important to remember that people can still transmit HIV to others during this phase, although people who are on ART and stay virally suppressed (having a very low level of virus in their blood) are much less likely to transmit HIV than those who are not virally suppressed. At the end of this phase, a person's viral load starts to go up and the CD4 cell count begins to go down. As this happens, the person may begin to have symptoms as the virus levels increase in the body, and the person moves into Stage 3.

Stage 3: Acquired immunodeficiency syndrome (AIDS)

AIDS is the most severe phase of HIV infection. People with AIDS have such badly damaged immune systems that they get an increasing number of severe illnesses, called opportunistic illnesses.

Without treatment, people with AIDS typically survive about 3 years.

Common symptoms of AIDS include chills, fever, sweats, swollen lymph glands, weakness, and weight loss. People are diagnosed with AIDS when their CD4 cell count drops below 200 cells/mm or if they develop certain opportunistic illnesses. People with AIDS can have a high viral load and be very infectious.

How to Know

The only way to know for sure whether you have HIV is to get tested. Knowing your status is important because it helps you make healthy decisions to prevent getting or transmitting HIV.

Some people may experience a flu-like illness within 2 to 4 weeks after infection (Stage 1 HIV infection). But some people may not feel sick during this stage. Flu-like symptoms include fever, chills, rash, night sweats, muscle aches, sore throat, fatigue, swollen lymph nodes, or mouth ulcers. These symptoms can last anywhere from a few days to several weeks. During this time, HIV infection may not show up on an HIV test, but people who have it are highly infectious and can spread the infection to others.

If you have these symptoms, that doesn't mean you have HIV. Each of these symptoms can be caused by other illnesses. But if you have these symptoms after a potential exposure to HIV, see a health care provider and tell them about your risk. The only way to determine whether you are infected is to be tested for HIV infection.

A Cure

No effective cure currently exists for HIV.

Modes of Transmission

You can get or transmit HIV only through specific activities. Most commonly, people get or transmit HIV through sexual behaviors and needle or syringe use.

Only certain body fluids—blood, semen, pre-seminal fluid, rectal fluids, vaginal fluids, and breast milk—from a person who has HIV can transmit HIV. These fluids must come in contact with a mucous membrane or damaged tissue or be directly injected into the bloodstream (from a needle or syringe) for transmission to occur. Mucous membranes are found inside the rectum, vagina, penis, and mouth.

In the United States, HIV is spread mainly by

- Having anal or vaginal sex with someone who has HIV without using a condom
- For the HIV-negative partner, receptive anal sex is the highest-risk sexual behavior, but you can also get HIV from insertive anal sex
- Either partner can get HIV through vaginal sex, though it is less risky for getting HIV than receptive anal sex.
- Sharing needles or syringes, rinse water, or other equipment (works) used to prepare drugs for injection with someone who has HIV. HIV can live in a used needle up to 42 days depending on temperature and other factors.

Less commonly, HIV may be spread

- From mother to child during pregnancy, birth, or breastfeeding. Although the risk can be high if a mother is living with HIV
- By being stuck with an HIV-contaminated needle or other sharp object. This is a risk mainly for health care workers.

In extremely rare cases, HIV has been transmitted by

- Oral sex—putting the mouth on the penis, vagina, or anus. In general, there's little to no risk of getting HIV from oral sex. But transmission of HIV, though extremely rare, is theoretically possible if an HIV-positive man ejaculates in his partner's mouth during oral sex.
- Receiving blood transfusions, blood products, or organ/tissue transplants that are contaminated with

HIV. This was more common in the early years of HIV, but now the risk is extremely small because of rigorous testing of the US blood supply and donated organs and tissues.

- Eating food that has been pre-chewed by an HIV-infected person. The contamination occurs when infected blood from a caregiver's mouth mixes with food while chewing. The only known cases are among infants.
- Being bitten by a person with HIV. Each of the very small number of documented cases has involved severe trauma with extensive tissue damage and the presence of blood. There is no risk of transmission if the skin is not broken.
- Contact between broken skin, wounds, or mucous membranes and HIV-infected blood or blood-contaminated body fluids.
- Deep, open-mouth kissing if both partners have sores or bleeding gums and blood from the HIV-positive partner gets into the bloodstream of the HIV-negative partner. HIV is not spread through saliva.

HIV does not survive long outside the human body (such as on surfaces), and it cannot reproduce outside a human host. It is not spread by

- Mosquitoes, ticks, or other insects.
- Saliva, tears, or sweat that is not mixed with the blood of an HIV-positive person.
- Hugging, shaking hands, sharing toilets, sharing dishes, or closed-mouth or "social" kissing with someone who is HIV-positive.
- Other sexual activities that don't involve the exchange of body fluids (for example, touching).

Anal Sex

Anal sex is the riskiest type of sex for getting or transmitting HIV. HIV can be found in certain body fluids—blood, semen, pre-seminal fluid, or rectal fluids—of a person who has HIV. Although receptive anal sex is much riskier for getting HIV than insertive anal sex, it's possible for either partner—the top or the bottom—to get HIV. The lining of the rectum is thin and may allow HIV to enter the body during anal sex. HIV can enter the body through the opening at the tip of the penis (or urethra); the foreskin if the penis isn't circumcised; or small cuts, scratches, or open sores anywhere on the penis.

Vaginal Sex

Either partner can get HIV through vaginal sex, though it is less risky for getting HIV than receptive anal sex. When a woman has vaginal sex with a partner who's HIV-positive, HIV can enter her body through the mucous membranes that line the vagina and cervix. Most women who get HIV get it from vaginal sex. Men can also get HIV from having vaginal sex with a woman who's HIV-positive. This is because vaginal fluid and blood can carry HIV. Men get HIV through the opening at the tip of the penis (or urethra); the foreskin if they're not circumcised; or small cuts, scratches, or open sores anywhere on the penis.

Oral Sex

The chance that an HIV-negative person will get HIV from oral sex with an HIV-positive partner is extremely low. Oral sex involves putting the mouth on the penis, vagina, or anus. In general, there's little to no risk of getting or transmitting HIV through oral sex. Factors that may increase the risk of transmitting HIV through oral sex are ejaculation in the mouth with oral ulcers, bleeding gums, genital sores, and the presence of other sexually transmitted diseases (STDs), which may or may not be visible. You can get other STDs from oral sex. And, if you get feces in your mouth during anilingus, you can get hepatitis A and B, parasites like *Giardia*, and bacteria like *Shigella*, *Salmonella*, *Campylobacter*, and *E. coli*.

Is there a connection between HIV and other sexually transmitted diseases?

Yes. Having another sexually transmitted disease (STD) can increase the risk of getting or transmitting HIV.

If you have another STD, you're more likely to get or transmit HIV to others.

Some of the most common STDs include gonorrhea, chlamydia, syphilis, trichomoniasis, human papillomavirus (HPV), genital herpes, and hepatitis. The only way to know for sure if you have an STD is to get tested. If you're sexually active, you and your partners should get tested for STDs (including HIV if you're HIV-negative) regularly, even if you don't have symptoms.

If you are HIV-negative but have an STD, you are about 3 times as likely to get HIV if you have unprotected sex with someone who has HIV. There are two ways that having an STD can increase the likelihood of getting HIV. If the STD causes irritation of the skin (for example, from syphilis, herpes, or human papillomavirus), breaks or sores may make it easier for HIV to enter the body during sexual contact. Even STDs that cause no breaks or open sores (for example, chlamydia, gonorrhea, trichomoniasis) can increase your risk by causing inflammation that increases the number of cells that can serve as targets for HIV.

If you are HIV-positive and also infected with another STD, you are about 3 times as likely as other HIV-infected people to spread HIV through sexual contact. This appears to happen because there is an increased concentration of HIV in the semen and genital fluids of HIV-positive people who also are infected with another STD.

Can a person already infected with one kind of HIV become infected with a different kind? Yes. This is called HIV superinfection.

HIV superinfection is when a person with HIV gets infected with another strain of the virus. The new strain of HIV can replace the original strain or remain along with the original strain.

The effects of superinfection differ from person to person. Superinfection may cause some people to get sicker faster because they become infected with a new strain of the virus that is resistant to medicine they're taking to treat their original infection. Research suggests that a hard-to-treat superinfection is rare.

What does the Center for Disease Control say about people groups?

Some groups of people in the United States are more likely to get HIV than others because of many factors, including the status of their sex partners, their risk behaviors, and where they live.

When you live in a community where many people have HIV infection, the chances of having sex or sharing needles or other injection equipment with someone who has HIV are higher. Within any community, the prevalence of HIV can vary among different populations.

Injecting Drugs

Your risk for getting HIV is very high if you use needles or works (such as cookers, cotton, or water) after someone with HIV has used them.

People who inject drugs, hormones, steroids, or silicone can get HIV by sharing needles or syringes and other injection equipment. The needles and equipment may have someone else's blood in them, and blood can transmit HIV. Likewise, you're at risk for getting hepatitis B and C if you share needles and works because these infections are also transmitted through blood. Another reason people who inject drugs can get HIV (and other sexually transmitted diseases) is that when people are high, they're more likely to have risky sex.

Stopping injection and other drug use can lower your chances of getting HIV a lot. You may need help to stop or cut down using drugs, but many resources are available.

Alcohol and Drugs

When you're drunk or high, you're more likely to make decisions that put you at risk for HIV, such as having sex without a condom.

Drinking alcohol, particularly binge-drinking, and using "club drugs" like Ecstasy, ketamine, GHB, and poppers can alter your judgment, lower your inhibitions, and impair your decisions about sex or other drug use.

You may be more likely to have unplanned and unprotected sex, have a harder time using a condom the right way every time you have sex, have more sexual partners, or use other drugs, including injection drugs or meth. Those behaviors can increase your risk of exposure to HIV.

If you have HIV, they can also increase your risk of spreading HIV to others. Being drunk or high affects your ability to make safe choices.

If you're going to a party or another place where you know you'll be drinking or using drugs, you can bring a condom so that you can reduce your risk if you have vaginal or anal sex.

Methods are available to help you stop or cut down on drinking or using drugs. Talk with a counselor, doctor, or other health care provider about options that might be right for you.

Tattoos and Body Piercing

There are no known cases in the United States of anyone getting HIV this way. However, it is possible to get HIV from a reused or not properly sterilized tattoo or piercing needle or other equipment, or from contaminated ink. It's possible to get HIV from tattooing or body piercing if the equipment used for these procedures has someone else's blood in it or if the ink is shared. The risk of getting HIV this way is very low, but the risk increases when the person doing the procedure is unlicensed, because of the potential for unsanitary practices such as sharing needles or ink. If you get a tattoo or a body piercing, be sure that the person doing the procedure is properly licensed and that they use only new or sterilized needles, ink, and other supplies.

Infection Control Procedures and Prevention of HIV and AIDS

Prevention

Today, more tools than ever are available to prevent HIV. In addition to abstinence, limiting your number of sexual partners, never sharing needles, and using condoms the right way every time you have sex.

Is abstinence the only 100 % effective way to prevent HIV transmission?

Yes. Abstinence means not having oral, vaginal, or anal sex. An abstinent person is someone who's never had sex or someone who's had sex but has decided not to continue having sex for some period of time. Abstinence is the only 100% effective way to prevent HIV, other sexually transmitted diseases (STDs), and pregnancy. The longer you wait to start having oral, vaginal, or anal sex, the fewer sexual partners you are likely to have in your lifetime. Having fewer partners lowers your chances of having sex with someone who has HIV or another STD.

Condoms

If you use them the right way every time you have sex, condoms are highly effective in preventing HIV infection. But it's important to educate yourself about how to use them the right way. Condoms can also help prevent other sexually transmitted diseases (STDs) you can get through body fluids, like gonorrhea and chlamydia. However, they provide less protection against STDs spread through skin-to-skin contact, like human papillomavirus or HPV (genital warts), genital herpes, and syphilis.

There are two main types of condoms: male and female.

Male Condoms

- A male condom is a thin layer of latex, polyurethane, polyisoprene, or natural membrane worn over the penis during sex.
- Latex condoms provide the best protection against HIV. Polyurethane (plastic) or polyisoprene (synthetic rubber) condoms are good options for people with latex allergies, but plastic ones break more often than latex ones. Natural membrane (such as lambskin) condoms have small holes in them, so they don't block HIV and other STDs.
- Use water- or silicone-based lubricants to lower the chances that a condom will break or slip during sex. Don't use oil-based lubricants (for example, Vaseline, shortening, mineral oil, massage oils, body lotions, and cooking oil) with latex condoms because they can weaken the condom and cause it to break. Don't use lubricants containing nonoxynol-9. It irritates the lining of the vagina and anus and increases the risk of getting HIV.

Female Condoms

- A female condom is a thin pouch made of a synthetic latex product called nitrile. It's designed to be worn by a woman in her vagina during sex.
- When worn in the vagina, female condoms are comparable to male condoms at preventing HIV, other STDs, and pregnancy. Some people use female condoms for anal sex. We don't currently know how well female condoms prevent HIV and other STDs when used by men or women for anal sex. But we do know that HIV can't travel through the nitrile barrier.
- It is safe to use any kind of lubricant with nitrile female condoms.

Even if condoms are used the right way every time during sex, there's still a risk of getting HIV.

Testing

The only way to know for sure whether you have HIV is to get tested. CDC recommends that everyone between the ages of 13 and 64 get tested for HIV at least once as part of routine health care. Knowing your HIV status gives you powerful information to help you take steps to keep you and your partner healthy. This section answers some of the most common questions related to HIV testing, including the types of tests available, where to get one, and what to expect when you get tested. CDC recommends that everyone between the ages of 13 and 64 get tested for HIV at least once as part of routine health care. **About 1 in 7 people in the United States who have HIV don't know they have it.**

People at higher risk should get tested more often. If you were HIV-negative the last time you were tested, and that test was more than one year ago, and you answer yes to any of the following questions, you should get an HIV test as soon as possible because these things increase your chances of getting the virus:

- Are you a man who has had sex with another man?
- Have you had sex—anal or vaginal—with an HIV-positive partner?
- Have you had more than one sex partner since your last HIV test?
- Have you injected drugs and shared needles or works (for example, water or cotton) with others?
- Have you exchanged sex for drugs or money?
- Have you been diagnosed with or sought treatment for another sexually transmitted disease?
- Have you been diagnosed with or treated for hepatitis or tuberculosis (TB)?
- Have you had sex with someone who could answer yes to any of the above questions or someone whose sexual history you don't know?

You should be tested at least once a year if you keep doing any of these things. Sexually active gay and bisexual men may benefit from more frequent testing (for example, every 3 to 6 months). If you're pregnant, talk to your

health care provider about getting tested for HIV and other ways to protect you and your child from getting HIV. Before having sex for the first time with a new partner, you and your partner should talk about your sexual and drug-use history, disclose your HIV status, and consider getting tested for HIV and learning the results.

The only way to know for sure whether you have HIV is to get tested.

Knowing your HIV status gives you powerful information to help you take steps to keep you and your partner healthy.

- If you test positive, consult a physician.
- If you test negative, you have more prevention tools available today to prevent HIV than ever before.
- If you are pregnant, you should be tested for HIV.

Even if you are in a monogamous relationship (both you and your partner are having sex only with each other), you should find out for sure whether you or your partner have HIV.

There are three types of tests available: nucleic acid tests (NAT), antigen/antibody tests, and antibody tests. HIV tests are typically performed on blood or oral fluid.

1. A **NAT** looks for the actual virus in the blood. The test can give either a positive/negative result or an amount of virus present in the blood (known as an HIV viral load test). This test is very expensive and not routinely used for screening individuals unless they recently had a high-risk exposure or a possible exposure and they have early symptoms of HIV infection. Nucleic acid testing is usually considered accurate during the early stages of infection. However, it is best to get an antibody or antigen/antibody test at the same time to help the health care provider understand what a negative NAT means. Taking pre-exposure prophylaxis (PrEP) or post-exposure prophylaxis (PEP) may also reduce the accuracy of NAT if you have HIV.
2. An **antigen/antibody test** looks for both HIV antibodies and antigens. Antibodies are produced by your immune system when you're exposed to bacteria or viruses like HIV. Antigens are foreign substances that cause your immune system to activate. If you're infected with 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. There is also a rapid antigen/antibody test available.
3. Most rapid tests and home tests are **antibody tests**. HIV antibody tests look for antibodies to HIV in your blood or oral fluid. 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.
 - While most laboratories are now using antigen/antibody tests, **laboratory-based antibody screening tests** are still available. These tests require blood to be drawn from your vein into a tube and then that blood is sent to a laboratory for testing. The results may take several days to be available.
 - With a **rapid antibody screening test**, results are ready in 30 minutes or less. These tests are used in clinical and nonclinical settings, usually with blood from a finger prick or with oral fluid.
 - The **oral fluid antibody self-test** provides fast results. You have to swab your own mouth to collect an oral fluid sample and use a kit to test it. Results are available in 20 minutes. The manufacturer provides confidential counseling and referral to follow-up testing sites. These tests are available for purchase in stores and online. They may be used at home, or they may be used for testing in some community and clinic testing programs.
 - The **home collection kit** involves pricking your finger to collect a blood sample, sending the sample by mail to a licensed laboratory, and then calling in for results as early as the next business day. This antibody test is anonymous. The manufacturer provides confidential counseling and referral to treatment.

If you use any type of antibody test and have a positive result, you will need to take a follow-up test to confirm your results. If your first test is a rapid home test and it's positive, you will be sent to a health care provider to get follow-up testing.

If your first test is done in a testing lab and it's positive, the lab will conduct the follow-up testing, usually on the same blood sample as the first test. Talk to your health care provider to see what type of HIV test is right for you.

Attitudes towards HIV and AIDS and Appropriate Behavior

Attitudes of the Infected and Uninfected

Today, an estimated 1.1 million people are living with HIV in the United States. Thanks to better treatments, people with HIV are now living longer—and with a better quality of life—than ever before. If you are living with HIV, it's important to make choices that keep you healthy and protect others. Stay healthy.

It's important to disclose your HIV status to your sex and needle-sharing partners even if you are uncomfortable doing it. Communicating with each other about your HIV status allows you and your partner to take steps to keep both of you healthy.

Many resources can help you learn ways to disclose your status to your partners. For tips on how to start the conversation with your partner, check out CDC campaigns.

Also, ask your health department about free partner notification services. Health department staff can help find your sex or needle-sharing partners to let them know they may have been exposed to HIV and provide them with testing, counseling, and referrals for other services. These partner notification services will not reveal your name unless you want to work with them to tell your partners.

Many states have laws that require you to tell your sexual partners if you're HIV-positive before you have sex (anal, vaginal, or oral) or tell your needle-sharing partners before you share drugs or needles to inject drugs. In some states, you can be charged with a crime if you don't tell your partner your HIV status, even if your partner doesn't become infected.

Get Support

Receiving a diagnosis of HIV can be a life-changing event. People can feel many emotions—sadness, hopelessness, and even anger. Allied health care providers and social service providers, often available at your health care provider's office, will have the tools to help you work through the early stages of your diagnosis and begin to manage your HIV. Talking to others who have HIV may also be helpful.

Find a local HIV support group. Learn about how other people living with HIV have handled their diagnosis.

Other Communicable Diseases: Opportunistic Infections

Opportunistic Infections

Opportunistic infections (OIs) are infections that occur more frequently and are more severe in individuals with weakened immune systems, including people with HIV. It is important for individuals with HIV to be familiar with the most common OIs so that they can work with their healthcare provider to prevent them as early as possible.

Most Common Opportunistic Infections

CDC has developed a list of OIs that indicate a person has AIDS. Receiving a diagnosis with any of these OIs means HIV infection has progressed to AIDS.

Candidiasis of bronchi, trachea, esophagus, or lungs	This illness is caused by infection with a common (and usually harmless) type of fungus called <i>Candida</i> . Candidiasis, or infection with <i>Candida</i> , can affect the skin, nails, and mucous membranes throughout the body. Persons with HIV infection often have trouble with <i>Candida</i> , especially in the mouth and vagina. However, candidiasis is only considered an OI when it infects the esophagus (swallowing tube) or lower respiratory tract, such as the trachea and bronchi (breathing tube), or deeper lung tissue.
Invasive cervical cancer	This is a cancer that starts within the cervix, which is the lower part of the uterus at the top of the vagina, and then spreads (becomes invasive) to other parts of the body. This cancer can be prevented by having your care provider perform regular examinations of the cervix.
Coccidioidomycosis	This illness is caused by the fungus <i>Coccidioides immitis</i> . It most commonly acquired by inhaling fungal spores, which can lead to a pneumonia that is sometimes called desert fever, San Joaquin Valley fever, or valley fever. The disease is especially common in hot, dry regions of the southwestern United States, Central America, and South America.
Cryptococcosis	This illness is caused by infection with the fungus <i>Cryptococcus neoformans</i> . The fungus typically enters the body through the lungs and can cause pneumonia. It can also spread to the brain, causing swelling of the brain. It can infect any part of the body, but (after the brain and lungs) infections of skin, bones, or urinary tract are most common.
Cryptosporidiosis, chronic intestinal (greater than one month's duration)	This diarrheal disease is caused by the protozoan parasite <i>Cryptosporidium</i> . Symptoms include abdominal cramps and severe, chronic, watery diarrhea.
Cytomegalovirus diseases (particularly retinitis) (CMV)	This virus can infect multiple parts of the body and cause pneumonia, gastroenteritis (especially abdominal pain caused by infection of the colon), encephalitis (infection) of the brain, and sight-threatening retinitis (infection of the retina at the back of eye). People with CMV retinitis have difficulty with vision that worsens over time. CMV retinitis is a medical emergency because it can cause blindness if not treated promptly.
Encephalopathy, HIV-related	This brain disorder is a result of HIV infection. It can occur as part of acute HIV infection or can result from chronic HIV infection. Its exact cause is unknown but it is thought to be related to infection of the brain with HIV and the resulting inflammation.
Herpes simplex (HSV): chronic ulcer(s) (greater than one month's duration); or bronchitis, pneumonitis, or esophagitis	Herpes simplex virus (HSV) is a very common virus that for most people never causes any major problems. HSV is usually acquired sexually or from an infected mother during birth. In most people with healthy immune systems, HSV is usually latent (inactive). However, stress, trauma, other infections, or suppression of the immune system, (such as by HIV), can reactivate the latent virus and symptoms can return. HSV can cause painful cold sores (sometime called fever blisters) in or around the mouth, or painful ulcers on or around the

	genitals or anus. In people with severely damaged immune systems, HSV can also cause infection of the bronchus (breathing tube), pneumonia (infection of the lungs) and esophagitis (infection of the esophagus, or swallowing tube).
Histoplasmosis	This illness is caused by the fungus <i>Histoplasma capsulatum</i> . <i>Histoplasma</i> most often infects the lungs and produces symptoms that are similar to those of influenza or pneumonia. People with severely damaged immune systems can get a very serious form of the disease called progressive disseminated histoplasmosis. This form of histoplasmosis can last a long time and involves organs other than the lungs.
Isosporiasis, chronic intestinal (greater than one month's duration)	This infection is caused by the parasite <i>Isospora belli</i> , which can enter the body through contaminated food or water. Symptoms include diarrhea, fever, headache, abdominal pain, vomiting, and weight loss.
Kaposi's sarcoma (KS)	This cancer, also known as KS, is caused by a virus called Kaposi's sarcoma herpesvirus (KSHV) or human herpesvirus 8 (HHV-8). KS causes small blood vessels, called capillaries, to grow abnormally. Because capillaries are located throughout the body, KS can occur anywhere. KS appears as firm pink or purple spots on the skin that can be raised or flat.
Lymphoma, multiple forms	Lymphoma refers to cancer of the lymph nodes and other lymphoid tissues in the body. There are many different kinds of lymphomas. Some types, such as non-Hodgkin lymphoma and Hodgkin lymphoma, are associated with HIV infection.
Tuberculosis (TB)	Tuberculosis (TB) infection is caused by the bacteria <i>Mycobacterium tuberculosis</i> . <u>TB can be spread through the air when a person with active TB coughs, sneezes, or speaks. Breathing in the bacteria can lead to infection in the lungs.</u> Symptoms of TB in the lungs include cough, tiredness, weight loss, fever, and night sweats. Although the disease usually occurs in the lungs, it may also affect other parts of the body, most often the larynx, lymph nodes, brain, kidneys, or bones
Mycobacterium avium (MAC) or Mycobacterium kansasii, disseminated or extrapulmonary. Other Mycobacterium, disseminated or extrapulmonary.	MAC is caused by infection with different types of mycobacterium: <i>Mycobacterium avium</i> , <i>Mycobacterium intracellulare</i> , or <i>Mycobacterium kansasii</i> . These mycobacteria live in our environment, including in soil and dust particles. They rarely cause problems for persons with healthy immune systems. In people with severely damaged immune systems, infections with these bacteria spread throughout the body and can be life-threatening.
Pneumocystis carinii pneumonia (PCP)	This lung infection, also called PCP, is caused by a fungus, which used to be called <i>Pneumocystis carinii</i> , but now is named <i>Pneumocystis jirovecii</i> . PCP occurs in people with weakened immune systems, including people with HIV. The first signs of infection are difficulty breathing, high fever, and dry cough.
Pneumonia, recurrent	Pneumonia is an infection in one or both of the lungs. <u>Many germs, including bacteria, viruses, and fungi can cause pneumonia,</u> with symptoms such as a

	cough (with mucous), fever, chills, and trouble breathing. In people with immune systems severely damaged by HIV, one of the most common and life-threatening causes of pneumonia is infection with the bacteria <i>Streptococcus pneumoniae</i> , also called <i>Pneumococcus</i> .
Progressive multifocal leukoencephalopathy	This rare brain and spinal cord disease is caused by the JC virus. It is seen almost exclusively in persons whose immune systems have been severely damaged by HIV. Symptoms may include loss of muscle control, paralysis, blindness, speech problems, and an altered mental state. This disease often progresses rapidly and may be fatal.
<i>Salmonella</i> septicemia, recurrent	<i>Salmonella</i> are a kind of bacteria that typically enter the body through ingestion of contaminated food or water. Infection with salmonella (called salmonellosis) can affect anyone and usually causes a self-limited illness with nausea, vomiting, and diarrhea. <i>Salmonella</i> septicemia is a severe form of infection in which the bacteria circulate through the whole body and exceeds the immune system's ability to control it.
Toxoplasmosis of brain	This infection, often called toxo, is caused by the parasite <i>Toxoplasma gondii</i> . The parasite is carried by warm-blooded animals including cats, rodents, and birds and is excreted by these animals in their feces. Humans can become infected with it by inhaling dust or eating food contaminated with the parasite. <i>Toxoplasma</i> can also occur in commercial meats, especially red meats and pork, but rarely poultry. Infection with toxo can occur in the lungs, retina of the eye, heart, pancreas, liver, colon, testes, and brain. Although cats can transmit toxoplasmosis, litter boxes can be changed safely by wearing gloves and washing hands thoroughly with soap and water afterwards. All raw red meats that have not been frozen for at least 24 hours should be cooked through to an internal temperature of at least 150°F.
Wasting syndrome due to HIV	Wasting is defined as the involuntary loss of more than 10% of one's body weight while having experienced diarrhea or weakness and fever for more than 30 days. Wasting refers to the loss of muscle mass, although part of the weight loss may also be due to loss of fat.

Hepatitis B Virus and Hepatitis C Virus Infection

Hepatitis is a disease characterized by inflammation of the liver. People with HIV infection in the United States are often affected by chronic viral hepatitis; about one-third are co-infected with either hepatitis B virus (HBV) or hepatitis C virus (HCV). More people living with HIV are infected with HCV than with HBV. About 1 in 10 people living with HIV are co-infected with HBV, and about 1 in 4 people are co-infected with HCV. Like HIV, HBV and HCV are spread by sharing needles, syringes, and other injection equipment. Both viruses can also be transmitted sexually, but HBV is much more likely than HCV to be transmitted sexually. Sexual transmission of HCV is most likely to happen among gay and bisexual men who are living with HIV. Pregnant women can pass these infections to their infants.

Viral hepatitis progresses faster and causes more liver-related health problems among people with HIV than among those who do not have HIV. Liver disease, much of which is related to HBV or HCV, is a major cause

of non-AIDS related deaths among people living with HIV. Everyone living with HIV should be tested for HBV and HCV. Those who are at risk for HBV should be vaccinated against it. Vaccination is the best way to protect against all of the ways that HBV is transmitted. No vaccine exists for HCV.

The best way to **prevent** HCV infection is to never inject drugs or to stop injecting drugs by getting into and staying in drug treatment. If you continue injecting drugs, always use new, sterile needles or syringes, and never reuse or share needles or syringes, water, or other drug preparation equipment.

HIV-HBV and HIV-HCV coinfections can be effectively treated in most people, but treatment can be complex, and people with coinfection should look for health care providers with expertise in the management of both HIV infection and viral hepatitis.

For HBV, treatment can delay or limit liver damage by suppressing the virus. Treatment for HCV infection cures more than 90% of people, including those living with HIV, in 12-24 weeks.

Given the risks of HBV or HCV coinfection to the health of people living with HIV, it is important to understand this risk, take steps to prevent infection, know your status, and if necessary, get medical care from someone who is experienced in treating people who are co-infected with HIV, HBV, and HCV.

Preventing Opportunistic Infections

The best ways to prevent getting an OI are to get into and stay on medical care. It is especially important that you get regular check-ups.

There are steps you can take to prevent getting an OI.

- Use condoms consistently and correctly to prevent exposure to sexually transmitted infections.
- Don't share drug injection equipment. Blood with hepatitis C in it can remain in syringes and needles after use and the infection can be transmitted to the next user.
- Get vaccinated – your doctor can tell you what vaccines you need. If he or she doesn't, you should ask.
- Understand what germs you are exposed to (such as tuberculosis or germs found in the stools, saliva, or on the skin of animals) and limit your exposure to them.
- Don't consume certain foods, including under cooked eggs, unpasteurized (raw) milk and cheeses, unpasteurized fruit juices, or raw seed sprouts.
- Don't drink untreated water such as water directly from lakes or rivers. Tap water in foreign countries is also often not safe. Use bottled water or water filters.
- Ask your doctor to review with you the other things you do at work, at home, and on vacation to make sure you aren't exposed to an OI.

Summary

In this lesson we have thoroughly discussed the most important aspects of HIV and AIDS and other communicable diseases. We have identified the types of HIV, its origin, the date in which the first diagnosis was made, and the 3 stages of HIV. We can now list the ways in which HIV is transmitted, ways to prevent infection, and how to be tested. We have discussed attitudes and behaviors of those infected with HIV and those who are not. And lastly we reviewed the types of opportunistic infections that often accompany those who are HIV positive.

It is recommended that service workers, such as salon professionals, stay up to date on all types of communicable diseases and to learn all key measures of prevention. Our next subject in this course is Sanitation and Sterilization.

HIV Resources

- 1) Center for Disease Control
 - a) Let's Stop HIV Together website
 - HIV Testing
 - * Page last reviewed: July 20, 2020
 - HIV Prevention
 - * Page last reviewed: June 16, 2020
 - HIV Treatment
 - * Page last reviewed: July 20, 2020
 - b) HIV
 - Transmission
 - * Page last reviewed: August 6, 2019
 - AIDS and Opportunistic Infections
 - * Page last reviewed: August 6, 2019
 - c) Guidelines for Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents
 - April 10, 2009
- 2) Knowledge, attitudes and risk of HIV, HBV and HCV infections in hairdressers of Palermo city (South Italy)
 - a) Emanuele Amodio, Maria Antonella Di Benedetto, Liborio Gennaro, Carmelo Massimo Maida, Nino Romano
 - Published: 05 November 2009
- 3) WebMD: HIV & AIDS Guide
 - a) What You Need to Know About HIV and AIDS
 - WebMD Medical Reference Reviewed by Jonathan E. Kaplan, MD on June 06, 2020
- 4) Measuring HIV stigma: Existing knowledge and gaps
 - a) Laura Nyblade
 - Published online: 23 Jan 2007
- 5) Avert: Global information and Education on HIV and AIDS
 - a) HIV Strains and Types
 - Last updated: 26 February 2019
 - b) Origin of HIV & AIDS
 - Last updated: 30 October 2019
- 6) National Institute on Drug Abuse
 - a) Drug Use and Viral Infections (HIV, Hepatitis) DrugFacts
 - This page was last updated July 2019

Final Examination

In order to complete this course, the student must complete the final examination correctly after fully and thoroughly reading and understanding the material provided to them during this course.

Please indicate whether the following statements are true or false:

1. HIV is the acronym for human immunodeficiency virus.
2. Being infected with HIV is exactly the same as having AIDS.
3. AIDS is the acronym for Acquired Immunodeficiency Syndrome.
4. HIV-1 is the most widespread type of HIV in the developed world.
5. HIV is spread only when someone is exposed to blood, semen, vaginal fluid or mother's milk from someone who is infected with HIV.
6. All people infected with HIV for 10 or more years will have all of the severe symptoms of the illness and show signs of near death.
7. A person's immune system can show impact of HIV infections such as, blotches that can be red, brown, pink or purplish under the skin or inside the mouth, nose or eyelids.
8. It's extremely important that you tell anyone you plan to have sex with that you are HIV positive.
9. Testing for HIV is the least reliable test than any other medical test available.
10. In 3 to 6 hours, HIV spreads within the body and becomes detectable when an HIV test is done.