

# Communicable Disease - HIV/AIDS Home Study Course

3 CE Credit Hours  
Text and Online Study Guide

Presented by the:  
*Center for Massage Therapy Continuing Education*

*PO Box 117 • Elk Point, SD 57025  
866-784-5940 • [www.massagetherapyceu.com](http://www.massagetherapyceu.com)*

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## Center for Massage Therapy Continuing Education

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PO Box 117  
Elk Point, SD 57025  
[www.massagetherapyceu.com](http://www.massagetherapyceu.com)  
Ph: 866-784-5940  
[info@massagetherapyceu.com](mailto:info@massagetherapyceu.com)

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## **Instructions for the Communicable Disease - HIV/AIDS home study course**

Thank you for investing in the Communicable Disease - HIV/AIDS home study course, a 3 CE credit hour course designed to further your knowledge in the practice of protecting yourself and your clients from HIV/AIDS and to provide you with important information regarding HIV/AIDS.

This guide will contain all of the instructions you will need to complete this course. This is a 3 CE hour course, so that means it should take you approximately 3 hours to read the text, login and complete the examination.

PLEASE READ THE FOLLOWING DIRECTIONS FOR COMPLETION OF THIS COURSE.

### **The following are steps to follow in completing this course:**

- 1. Read the instructions and review the text and exam.**
- 2. Access the online examination in your account at [www.massagetherapyceu.com](http://www.massagetherapyceu.com).**
- 3. Complete your examination and print your certificate. The exam is open book and there is no time limit for completion.**

You must pass the exam with an 80% or better to pass this home study e-course. You are allowed to access and take the exam up to 3 times if needed. There is no time limit when taking the exam. Feel free to review the text while taking the exam. There are no trick questions on the exam. All of the answers are clearly found in the text. The exam is also included at the end of the text for review before taking the exam.

**It is advised to answer the exam questions in the study guide before testing online. That way, when you are testing you do not have go back and forth through the online exam and risk losing your answered questions!**

Good luck as you complete this course. If you have any questions please feel free to contact us at 866-784-5940, 712-490-8245 or [info@massagetherapyceu.com](mailto:info@massagetherapyceu.com). Most state boards require that you keep your “certificate of achievement” for at least four years in case of audit. Thank you for taking our Communicable Disease - HIV/AIDS home study e-course.

## **Communicable Disease - HIV/AIDS Text**

### **What is HIV?**

HIV is known as the human immunodeficiency virus that causes AIDS (acquired immunodeficiency syndrome). It is a virus that attacks a person's immune system.

This virus may be passed from one person to another when infected blood, semen or vaginal secretions come in contact with an uninfected person's broken skin or mucous membranes. Mucous membranes include wet, thin tissue found in certain openings to the human body. These include the mouth, eyes, nose, vagina, rectum and opening of the penis. Infected pregnant women can also pass HIV to their baby during pregnancy or delivery, as well as through breast-feeding.

### **What is a virus?**

A virus is an infectious agent that is unable to grow or reproduce outside a host cell. Viruses can infect all cellular forms of life and are commonly spread through air, water, food, saliva, etc. Viruses that cause infections such as the common cold, chicken pox, mumps, tonsillitis and strep throat spread through the air and through casual human-to-human contact.

The HIV virus differs from the typical virus in that it cannot survive in the air, on food or in water. It can only be passed through bodily fluids such as blood and semen. HIV is found in varying concentrations in blood, semen, vaginal fluid, breast milk, saliva and tears.

### **What is the origin of HIV?**

Although there are several theories on how HIV came to be, the origin of HIV is not known. The earliest known case of HIV in a human was from a blood sample collected in 1959 from a man in Kinshasa, Democratic Republic of Congo. (How he became infected is not known). Genetic analysis of this blood sample suggested that HIV-1 may have stemmed from a single virus in the late 1940's or early 1950's.

We know that the virus has existed in the United States since at least the mid to late 1970's. From 1979-1981 rare types of pneumonia, cancer and other illnesses were being reported by doctors in Los Angeles and New York in a number of male patients who had sex with other men. These were conditions not usually found in people with healthy immune systems.

In 1982, public health officials began to use the term "acquired immunodeficiency syndrome," or AIDS, to describe the occurrences of opportunistic infections, Kaposi's sarcoma (a kind of cancer) and pneumonia in previously healthy people. Formal tracking of AIDS cases began that year in the United States.

In 1983, scientists discovered the virus that causes AIDS. The virus was at first named HTLV-III/LAV (human T-cell lymphotropic virus-type III/lymphadenopathy- associated virus) by an international scientific committee. This name was later changed to HIV (human immunodeficiency virus).

For many years scientists theorized as to the origins of HIV and how it appeared in the human population, most believing that HIV originated in other primates. Then in 1999, an international team of researchers reported that they had discovered the origins of HIV-1, the predominant strain of HIV in the developed world. A subspecies of chimpanzees native to west equatorial Africa had been identified as the original source of the virus. The researchers believe that HIV-1 was introduced into the human population when hunters became exposed to infected blood.

### **What is AIDS?**

AIDS stands for **A**cquired **I**mmunodeficiency **S**yndrome.

Acquired – means that the disease is not hereditary but develops after birth from contact with a disease causing agent, HIV.

Immunodeficiency – means that the disease is characterized by a weakening of the immune system.

Syndrome – refers to a group of symptoms that collectively indicate or characterize a disease. In the case of AIDS this can include the development of certain infections and/or cancers, as well as a decrease in the number of certain cells in a person's immune system.

### **What does an "HIV-Positive" test result mean?**

A positive test result means that the body has been infected by the human immunodeficiency virus, and that this person is capable of transmitting it to others. The test does not look for the actual virus itself, but has found evidence of it (antibodies produced by the body in response to HIV infection) in the blood. There's no way to tell from this result who gave a person the virus, how long they've had it, or when it will begin to affect their health. You may see or hear the results called "HIV-positive," "HIV+," "HIV-antibody positive," or "seropositive for HIV." These terms all mean the same thing. People who have been infected with the human immunodeficiency virus are said to have "HIV disease." While the virus itself is not a disease, it progressively damages the body's immune system. This puts a person at risk for developing illnesses they wouldn't otherwise get.

At this time, doctors don't know of any way to rid the body of HIV. There is no cure. Once a person has been infected, they have it for life.

### **How does HIV harm the body?**

Viruses tend to be specialists. They zero in on a few particular types of cells in the body and move in. The human immunodeficiency virus is best known for targeting the T cells of the immune system. However, it can also attack cells of the brain, nervous system, digestive system, lymphatic system and other parts of the body.

The immune system is made up of specialized cells in the bloodstream that fight off invading germs to keep the body healthy. The "T" cells (also referred to as "T4," "helper-T," or "CD4" cells) are the brains of the operation. These white blood cells identify invaders and give orders to soldier-type cells, which then battle various bacteria, viruses, cancers, fungi, and parasites that can make a person sick.

Like all viruses, the HIV is only interested in one thing: reproducing itself. Once it has attacked and moved into a T cell, it converts that cell into a miniature virus factory. Eventually there are so many new viruses in the cell that the T cell explodes, scattering the HIV back into the bloodstream. The virus then moves on to fresh T cells and repeats the process. Over time, the HIV can destroy virtually all of an infected person's T cells in this manner.

With fewer and fewer "leaders" to rely on for warnings, the "soldier" cells become powerless. They can no longer recognize and fight off common organisms that would not present a problem to a healthy immune system. These organisms may be lying dormant in the body already, or may enter from outside. The immune system's weakness gives them the opportunity to wake up, multiply and cause illness. Thus, we call these illnesses "opportunistic infections." People with fully functioning immune systems are almost never troubled by these particular infections-but those with damaged immune systems are highly vulnerable to them.

### **Does every case of HIV cause AIDS?**

We don't know for certain. Although the scientific evidence is overwhelming and compelling that HIV is the cause of AIDS, the disease process is still not completely understood. This incomplete understanding has led some people to make statements that AIDS is not caused by an infectious agent or is caused by a virus that is not HIV. This is not only misleading, but may have dangerous consequences. Infection with HIV has been the sole common factor shared by AIDS cases throughout the world among men who have sex with men, transfusion recipients, persons with hemophilia, sex partners of infected persons, children born to infected women and occupationally exposed health care workers.

Studies show that the majority of untreated people do eventually become ill from HIV. However, with regular medical care and other positive lifestyle factors, such as emotional support, many long-term survivors have been living with HIV/AIDS for upwards of two decades. As existing treatments are used earlier in the course of HIV disease and new treatments are developed, it has become possible to further postpone, and perhaps even prevent, illness.

The conclusion after more than 20 years of scientific research is that people, if exposed to HIV through sexual contact or injecting drug use for example, may become infected with HIV. If they become infected, most will eventually develop AIDS.

### **How many people in the United States are infected with HIV or AIDS?**

The Center for Disease Control states that at the end of 2003, an estimated 1,039,000 to 1,185,000 persons in the United States were living with HIV/AIDS.

In 2005 alone, 37,331 cases of HIV/AIDS in adults, adolescents and children were diagnosed in the 33 states with long-term, confidential name-based HIV reporting. The Center for Disease Control has estimated that approximately 40,000 persons in the United States become infected with HIV each year, with about ¼ of them not knowing they are infected.

### **Pertinent Worldwide HIV/AIDS Statistics**

According to Avert (<http://www.avert.org/worldstats.htm>), an international AIDS charity, in 2007, an estimated 33.2 million people worldwide were infected with either HIV or AIDS. Of that 33.2 million, it is estimated that adults (people 15 and over) accounted for 30.8 million cases and children accounted for an estimated 2.5 million cases. It is estimated that 2.5 million new cases of HIV/AIDS are diagnosed each year throughout the world.

The following are other important worldwide HIV/AIDS statistics reported by Avert:

- In 2007, there were a reported 2.1 million deaths in the world resulting from HIV/AIDS.
- More than 25 million people have died of AIDS since 1981.
- Africa has 12 million AIDS orphans.
- At the end of 2007, women accounted for 50% of all adults living with HIV worldwide, and for 61% in sub-Saharan Africa.
- Young people (under 25 years old) account for half of all new HIV infections worldwide.
- In developing and transitional countries, 7.1 million people are in immediate need of life-saving AIDS drugs; of these, only 2.015 million (28%) are receiving the drugs.

### **How is HIV spread?**

HIV transmission can occur when blood, semen, pre-seminal fluid, vaginal fluid or breast milk from an infected person enters the body of an uninfected person.

Some health care workers have become infected after being stuck with needles containing HIV infected blood or, less frequently when infected blood comes in contact with a worker's open cut or is splashed into a worker's eyes or inside their nose. There has been only one instance of a patient being infected by an HIV infected dentist to his patient.

HIV can also be transmitted through receipt of infected blood or blood clotting factors. However, since 1985, all donated blood in the United States has been tested for HIV. Therefore, the risk of infection through transfusion of blood or blood products is extremely low. The U.S. blood supply is considered to be among the safest in the world.

HIV can enter the body through a vein (injection drug use), the lining of the anus or rectum, the lining of the vagina and/or cervix, the opening to the penis, the mouth, other mucous membranes (eyes or inside of the nose), or cuts and sores. Intact, healthy skin is an excellent barrier against HIV, other viruses and bacteria.

These are the most common ways that HIV is transmitted from one person to another:

- by having sex (anal, vaginal or oral) with an HIV infected person
- by sharing needles or injection equipment with an injection drug user who is infected with HIV
- from HIV infected women to their babies before or during birth or through breast feeding after birth

### **Which body fluids transmit HIV?**

These body fluids have been shown to contain high concentrations of HIV:

- blood
- semen
- vaginal fluid
- breast milk
- other body fluids containing blood

The following are additional body fluids that may transmit the virus that health care workers may come into contact with:

- fluid surrounding the brain and the spinal cord
- fluid surrounding bone joints
- fluid surrounding an unborn baby

HIV has been found in the saliva and tears of some persons living with HIV, but in very low quantities. It is important to understand that finding a small amount of HIV in a body fluid does not necessarily mean that HIV can be *transmitted* by that body fluid. HIV has *not* been recovered from the sweat of HIV infected persons. Contact with saliva, tears or sweat has never been shown to result in transmission of HIV.

### **Can a person contact HIV from open mouth kissing?**

Open mouth kissing is considered a very low risk activity for the transmission of HIV. However, prolonged open mouth kissing could damage the mouth or lips and allow HIV to pass from an infected person to a partner and then enter the body through cuts or sores in the mouth. Because of this possible risk, the CDC recommends against open mouth kissing with an infected partner.

One case in the U.S. suggests that a woman became infected with HIV from her partner through exposure to contaminated blood during open mouth kissing.

### **Can a person contact HIV from performing and receiving oral sex?**

**Yes.** It is possible for either partner to become infected with HIV through performing or receiving oral sex. There have been a few cases of HIV transmission from performing oral sex on a person infected with HIV. While no one knows exactly what the degree of risk is, evidence suggests that the risk is less than that of unprotected anal or vaginal sex.

If the person performing oral sex has HIV, blood from their mouth may enter the body of the person receiving oral sex through:

- the lining of the urethra (the opening at the tip of the penis)
- the lining of the vagina or cervix
- the lining of the anus
- directly into the body through small cuts or open sores

If the person receiving oral sex has HIV, their blood, semen (cum), pre-seminal fluid (pre-cum) or vaginal fluid may contain the virus. Cells lining the mouth of the person performing oral sex may allow HIV to enter their body.

The risk of HIV transmission increases:

- if the person performing oral sex has cuts or sores around or in their mouth or throat
- if the person receiving oral sex ejaculates in the mouth of the person performing oral sex

- if the person receiving oral sex has another sexually transmitted disease (STD)

Not having (abstaining from) sex is the most effective way to avoid HIV transmission.

If you choose to perform oral sex, and your partner is male:

- use a latex condom on the penis
- if you or your partner is allergic to latex, plastic (polyurethane) condoms can be used

Studies have shown that latex condoms are very effective, though not perfect, in preventing HIV transmission when used correctly and consistently. If either partner is allergic to latex, plastic (polyurethane) condoms for either the male or female can be used.

If you choose to perform oral sex, and your partner is female:

- use a latex barrier (such as a natural rubber latex sheet, a dental dam or a cut-open condom that makes a square) between your mouth and the vagina. A latex barrier such as a dental dam reduces the risk of blood or vaginal fluids entering your mouth. Plastic food wrap also can be used as a barrier.

If you choose to share sex toys with your partner, such as dildos or vibrators:

- each partner should use a new condom on the sex toy
- be sure to clean sex toys between each use

### **Can a person contact HIV from having vaginal sex?**

**Yes.** It is possible for either partner to become infected with HIV through vaginal sex (intercourse). In fact, it is the most common way the virus is transmitted in much of the world. HIV can be found in the blood, semen (cum), pre-seminal fluid (pre-cum) or vaginal fluid of a person infected with the virus.

In women, the lining of the vagina can sometimes tear and possibly allow HIV to enter the body. HIV can also be directly absorbed through the mucous membranes that line the vagina and cervix.

In men, HIV can enter the body through the urethra (the opening at the tip of the penis) or through small cuts or open sores on the penis. Risk for HIV infection increases if you or a partner has a sexually transmitted disease (STD).

Not having (abstaining from) sex is the most effective way to avoid HIV transmission. If you choose to have vaginal sex, use a latex condom to help protect both you and your partner from HIV and other STD's. Studies have shown that latex condoms are very effective, though not perfect, in preventing HIV transmission when used correctly and consistently. If either partner is allergic to latex, plastic (polyurethane) condoms for either the male or female can be used.

### **Can a person contact HIV from anal sex?**

**Yes.** In fact, unprotected (without a condom) anal sex (intercourse) is considered to be very risky behavior. It is possible for either sex partner to become infected with HIV during anal sex. HIV can be found in the blood, semen, pre-seminal fluid or vaginal fluid of a person infected with the virus. In general, the person receiving the semen is at greater risk of getting HIV because the lining of the rectum is thin and may allow the virus to enter the body during anal sex. A person who inserts his penis into an infected partner also is at risk because HIV can enter through the urethra (the opening at the tip of the penis) or through small cuts, abrasions or open sores on the penis.

Not having (abstaining from) sex is the most effective way to avoid HIV. If people choose to have anal sex, they should use a latex condom. Most of the time, condoms work well. However, condoms are more likely to break during anal sex than during vaginal sex. Thus, even with a condom, anal sex can be risky. A person should use generous amounts of water-based lubricant in addition to the condom to reduce the chances of the condom breaking.



### **Can a person contact HIV from sharing drug needles?**

**Yes.** At the start of every intravenous injection, blood is introduced into the needle and syringe. HIV can be found in the blood of a person infected with the virus. The re-use of a blood contaminated needle or syringe by another drug injector (sometimes called "direct syringe sharing") carries a high risk of HIV transmission because infected blood can be injected directly into the bloodstream.

Sharing drug equipment is a risk for spreading HIV. Infected blood can be introduced into drug solutions by:

- using blood-contaminated syringes to prepare drugs
- reusing water
- reusing bottle caps, spoons or other containers ("spoons" and "cookers") used to dissolve drugs in water and to heat drug solutions
- re-using small pieces of cotton or cigarette filters ("cottons") used to filter out particles that could block the needle

"Street sellers" of syringes may repackage used syringes and sell them as sterile syringes. For this reason, people who continue to inject drugs should obtain syringes from reliable sources of sterile syringes, such as pharmacies. It is important to know that sharing a needle or syringe for any use, including skin popping and injecting steroids, can put one at risk for HIV and other blood-borne infections.

### **Can a person contact HIV from a tattoo or body piercing?**

**Yes.** A risk of HIV transmission does exist if instruments contaminated with blood are either not sterilized or disinfected or are used inappropriately between clients. CDC recommends that single-use instruments intended to penetrate the skin be used once, then disposed of. Reusable instruments or devices that penetrate the skin and/or contact a client's blood should be thoroughly cleaned and sterilized between clients.

Personal service workers who do tattooing or body piercing should be educated about how HIV is transmitted and take precautions to prevent transmission of HIV and other blood-borne infections in their settings.

If you are considering getting a tattoo or having your body pierced, ask staff at the establishment what procedures they use to prevent the spread of HIV and other blood-borne infections, such as the hepatitis B virus. You also may call the local health department to find out what sterilization procedures are in place in the local area for these types of establishments.

### **Can a person contract HIV from getting a manicure or pedicure?**

There is no evidence to support HIV transmission occurring through receiving a manicure or pedicure. The risk is extremely minimal. Anytime infected blood enters another person's body, transmission is possible but the likelihood of that happening via nail instruments is very small. HIV does not survive long when exposed to the environment.

Other infectious diseases like Hepatitis B and C are more robust and can survive in an infectious state for longer, so it is possible to contract those diseases from contaminated instruments.

### **Can a person contact HIV from engaging in sporting activities?**

There are no documented cases of HIV being transmitted during participation in sports. The very low risk of transmission during sports participation would involve sports with direct body contact in which bleeding might be expected to occur.

If someone is bleeding, their participation in the sport should be interrupted until the wound stops bleeding and is both antiseptically cleaned and securely bandaged. There is no risk of HIV transmission through sports activities where bleeding does not occur.

### **Can a person contact HIV from being bitten by a mosquito?**

**No.** From the start of the HIV epidemic there has been concern about HIV transmission from biting and bloodsucking insects, such as mosquitoes. However, studies conducted by the CDC and elsewhere have shown no evidence of HIV transmission from mosquitoes or any other insects, even in areas where there are many cases of AIDS and large populations of mosquitoes. Lack of such outbreaks, despite intense efforts to detect them, supports the conclusion that HIV is not transmitted by insects.

The results of experiments and observations of insect biting behavior indicate that when an insect bites a person, it does not inject its own or a previously bitten person's or animal's blood into the next person bitten. Rather, it injects saliva, which acts as a lubricant so the insect can feed efficiently. Diseases such as yellow fever and malaria are transmitted through the saliva of specific species of mosquitoes. However, HIV lives for only a short time inside an insect and, unlike organisms that are transmitted via insect bites, HIV does not reproduce (and does not survive) in insects. Thus, even if the virus enters a mosquito or another insect, the insect does not become infected and cannot transmit HIV to the next human it bites.

There also is no reason to fear that a mosquito or other insect could transmit HIV from one person to another through HIV-infected blood left on its mouth parts. Several reasons help explain why this is so. First, infected people do not have constantly high levels of HIV in their blood streams. Second, insect mouth parts retain only very small amounts of blood on their surfaces. Finally, scientists who study insects have determined that biting insects normally do not travel from one person to the next immediately after ingesting blood. Rather, they fly to a resting place to digest the blood meal.

### **Can a person contact HIV from a blood transfusion?**

**Yes.** HIV can be transmitted through receipt of infected blood or blood clotting factors during a blood transfusion. However, since 1985, all donated blood in the United States has been tested for HIV. Therefore, the risk of infection through transfusion of blood or blood products is extremely low. The U.S. blood supply is considered to be among the safest in the world.

The Public Health Service has recommended an approach to blood safety in the U.S. that includes stringent donor selection practices and the use of screening tests. U.S. blood donations have been screened for antibodies to HIV-1 since March 1985 and HIV-2 since June 1992. The p24 Antigen test was added in 1996. Blood and blood products that test positive for HIV are safely discarded and are not used for transfusions.

### **What can I do to protect myself from HIV/AIDS, professionally and personally?**

Prevention is the best strategy when it comes to exposure to the HIV virus. Whether in a healthcare setting, a massage setting or in a personal setting, the following are preventative measures recommended by the Center for Disease Control that should always be taken to minimize your and others exposure the HIV.

Healthcare personnel should assume that blood and other body fluids from all patients are potentially infectious. They should therefore follow infection control precautions at all times. These precautions include:

- the routine use of barriers (such as gloves and/or goggles) when anticipating contact with blood or body fluids
- washing hands and other skin surfaces immediately after contact with blood or body fluids
- careful handling and disposing of sharp instruments during and after use

Safety devices have been developed to help prevent needle-stick injuries. If used properly, these types of devices may reduce the risk of exposure to HIV. Many percutaneous injuries are related to sharps disposal. Strategies for safer disposal, including safer design of disposal containers and placement of containers, are being developed. Although the most important strategy for reducing the risk of occupational HIV transmission is to prevent occupational exposures, plans for post-exposure management of health care personnel should be in place.

In the massage and bodywork setting, the following are preventative measures that you can take to minimize your exposure to HIV:

- thoroughly wash your hands before and after each massage session
- avoid massaging open sores, cuts and/or wounds on any client
- protect your own open cuts and/sores with a barrier between you and your clients
- if necessary, wear latex gloves to protect yourself from clients

In a personal setting, latex condoms, when used consistently and correctly, are highly effective in preventing heterosexual sexual transmission of HIV, the virus that causes AIDS. Research on the effectiveness of latex condoms in preventing heterosexual transmission is both comprehensive and conclusive. The ability of latex condoms to prevent transmission has been scientifically established in laboratory studies as well as in epidemiologic studies of uninfected persons at very high risk of infection because they were involved in sexual relationships with HIV-infected partners. The most recent analysis of epidemiologic studies of condom effectiveness was published by Weller and Davis in 2004. This analysis refines and updates their previous report published in 1999. The analysis demonstrates that the consistent use of latex condoms provides a high degree of protection against heterosexual transmission of HIV. It should be noted that condom use cannot provide absolute protection against HIV. The surest way to avoid transmission of HIV is to abstain from sexual intercourse or to be in a long-term mutually monogamous relationship with a partner who has been tested and you know is not infected.

For needle sharers, the CDC recommends that people who inject drugs should be regularly counseled to:

- stop using and injecting drugs
- enter and complete substance abuse treatment, including relapse prevention

For injection drug users who cannot or will not stop injecting drugs, the following steps may be taken to reduce personal and public health risks:

- never reuse or "share" syringes, water, or drug preparation equipment
- only use syringes obtained from a reliable source (such as pharmacies or needle exchange programs)
- use a new, sterile syringe each time to prepare and inject drugs
- if possible, use sterile water to prepare drugs; otherwise, use clean water from a reliable source (such as fresh tap water)
- use a new or disinfected container ("cooker") and a new filter ("cotton") to prepare drugs
- clean the injection site with a new alcohol swab prior to injection
- safely dispose of syringes after one use

If new, sterile syringes and other drug preparation and injection equipment are not available, then previously used equipment should be boiled in water or disinfected with bleach before reuse.

### **How will I be able to tell if someone has HIV/AIDS?**

The only way to know if you or someone else is infected is to be tested for HIV infection. You cannot rely on symptoms to know whether or not someone is infected. Many people who are infected with HIV do not have any symptoms at all for 10 years or more.

The following **may be** warning signs of advanced HIV infection:

- rapid weight loss
- dry cough
- recurring fever or profuse night sweats
- profound and unexplained fatigue
- swollen lymph glands in the armpits, groin, or neck
- diarrhea that lasts for more than a week
- white spots or unusual blemishes on the tongue, in the mouth, or in the throat
- pneumonia
- red, brown, pink, or purplish blotches on or under the skin or inside the mouth, nose, or eyelids
- memory loss, depression, and other neurological disorders

However, no one should assume they are or someone else is infected if they have any of these symptoms. Each of these symptoms can be related to other illnesses. Again, **the only way to determine whether you are, or someone else is infected is to be tested for HIV.**

Similarly, you cannot rely on symptoms alone to determine if a person has HIV/AIDS. HIV and AIDS are a medical diagnosis made by a doctor following criteria set forth by the Center for Disease Control.

## **What are the stages of HIV infection?**

### **1. Primary Infection (Acute Infection)**

Primary HIV infection is the first stage of the HIV disease, typically lasting only a week or two, when the virus first establishes itself in the body. Some researchers use the term acute HIV infection to describe the period of time between when a person is first infected with HIV and when antibodies (proteins made by the immune system in response to infection) against the virus are produced by the body (usually 6 to 12 weeks) and can be detected by an HIV test.

Up to 70% of people newly infected with HIV will experience some "flu-like" symptoms during this stage. These symptoms, which usually last no more than several days, might include fevers, chills, night sweats and rashes. Afterward, the infected person returns to feeling and looking completely well. The remaining percentage of people either do not experience symptoms of acute infection or have symptoms so mild that they may not notice them. Given the general character of these symptoms, they can easily have causes other than HIV, such as a flu infection. For example, if you had some risk for HIV infection a few days ago and are now experiencing flu-like symptoms, it is possible that HIV is responsible for the symptoms, but it is **also** possible that you have some other viral infection instead.

During acute HIV infection, the virus makes its way to the lymph nodes, a process which is believed to take three to five days. Then HIV actively replicates and releases new virus particles into the bloodstream. This burst of rapid HIV replication usually lasts about two months. People at this stage often have a very high amount of HIV virus in the body. However, people with acute HIV infection usually will not test positive for HIV antibodies, since it takes the body approximately one to three months to produce antibodies against HIV.

### **2. Seroconversion**

This term refers to the time when an HIV positive person's immune system responds to the infection by producing antibodies to the virus. Most people develop antibodies within three months after infection, and some can take up to six months.

If an antibody test is done before seroconversion is complete, it may give a "false negative" result because sufficient antibodies have not yet been developed by the body. A three-month window period between infection and production of antibodies is normal for most of the population. Very rarely (in only a few cases ever), a person may take six months to produce antibodies.

### **3. The Asymptomatic Stage**

After the acute stage of HIV infection, people infected with HIV continue to look and feel completely well for long periods, usually for many years. During this time, the only indication that they are infected with HIV is that they will test positive on standard (antibody) HIV tests and they may have swollen lymph glands. This means that people look and feel healthy but can infect other people through unprotected sex or through needle sharing, especially if they have not been tested and do not know that they are infected.

Even though an infected person may appear perfectly healthy, HIV is still very active and is continuing to weaken the immune system during this stage. In some individuals, the virus appears to slowly damage the immune system over a number of years. In most people, however, a faster decline of the immune system occurs at some point. This damage can be seen in blood tests before any actual symptoms are experienced.

#### **4. Early- and Medium-Stage HIV Symptomatic Disease**

When the immune system is compromised by HIV infection, many people begin to experience some mild HIV disease symptoms, such as skin rashes, fatigue, night sweats, slight weight loss, mouth ulcers and fungal skin and nail infections. Most, though not all, will experience mild symptoms such as these before developing more serious illnesses. Although one's prognosis varies greatly depending on a number of factors, it is generally believed that it takes five to seven years for the first mild symptoms to appear. These symptoms mark the early and medium stages of HIV symptomatic disease.

As the disease progresses, some individuals may become quite ill even if they have not yet been diagnosed with AIDS, the late stage of HIV disease. Typical problems include chronic oral or vaginal thrush (a fungal rash or spots), recurrent herpes blisters on the mouth (cold sores) or genitals, ongoing fevers, persistent diarrhea and significant weight loss.

These symptoms are not necessarily specific to HIV or the development of AIDS. However, they should be of concern to people who have tested positive for HIV. Usually, symptoms occur when the virus has already caused considerable damage to the immune system. For that reason, people with HIV should not wait until symptoms appear to get medical treatment. Also, people with high risk for HIV infection should not wait for symptoms to appear before getting tested.

#### **5. Late-Stage HIV Disease (AIDS)**

When immune system damage is more severe, HIV positive individuals may experience opportunistic infections (called "opportunistic" because they are caused by organisms which do not ordinarily induce illness in people with normal immune systems, but take the opportunity to flourish in people with compromised immune systems). Some of the most common opportunistic infections include pneumonia, complex (MAC) disease, cytomegalovirus (CMV), toxoplasmosis and candidiasis.

According to the Centers for Disease Control and Prevention, an AIDS diagnosis can be given to an HIV positive person who has a CD4 count of less 200/mm<sup>3</sup> *or* a history of an "AIDS-defining illness" (such as one of the opportunistic infections mentioned above). It is important to note that this definition of AIDS may apply to HIV positive individuals who have never experienced symptoms of HIV disease.

Receiving an AIDS diagnosis does not necessarily mean that the diagnosed person will die soon; some people have lived for many years after their diagnosis. This is even more the case today with the availability of highly active antiretroviral therapy (HAART), which has helped extend the lives of thousands of people living with HIV and AIDS. In addition, many opportunistic infections can be prevented or treated successfully. This has substantially increased the longevity and quality of life of people living with HIV/AIDS.

#### **How is HIV treated?**

When AIDS first surfaced in the U.S., there were no drugs to combat the underlying immune deficiency and few treatments existed for the opportunistic diseases that resulted. Researchers, however, have developed drugs to fight both HIV infection and its associated infections and cancers.

The Food and Drug Administration (FDA) has approved a number of drugs for treating HIV infection. The first group of drugs, called reverse transcriptase (RT) inhibitors, interrupts an early stage of the virus making copies of itself. Nucleoside/nucleotide RT inhibitors are faulty DNA building blocks. When these faulty pieces are incorporated into the HIV DNA (during the process when the HIV RNA is converted to HIV DNA), the DNA chain cannot be completed, thereby blocking HIV from replicating in a cell. Non-nucleoside RT inhibitors bind to reverse transcriptase, interfering with its ability to convert the HIV RNA into HIV DNA. This class of drugs may slow the spread of HIV in the body and delay the start of opportunistic infections.

FDA has approved a second class of drugs for treating HIV infection. These drugs, called protease inhibitors, interrupt the virus from making copies of itself at a later step in its life cycle.

FDA also has introduced a third new class of drugs, known as fusion inhibitors, to treat HIV infection. Fuzeon (enfuvirtide or T-20), the first approved fusion inhibitor, works by interfering with the ability of HIV-1 to enter into cells by blocking the merging of the virus with the cell membranes. This inhibition blocks HIV's ability to enter and infect the human immune cells. Fuzeon is designed for use in combination with other anti-HIV treatments. It reduces the level of HIV infection in the blood and may be effective against HIV that has become resistant to current antiviral treatment schedules.

Because HIV can become resistant to any of these drugs, healthcare providers must use a combination treatment to effectively suppress the virus. When multiple drugs (three or more) are used in combination, it is referred to as highly active antiretroviral therapy, or HAART, and can be used by people who are newly infected with HIV as well as people with AIDS. Recently, the FDA approved the first one-a-day three drug-combination pill called Atripla.

Researchers have credited HAART as being a major factor in significantly reducing the number of deaths from AIDS in this country. While HAART is not a cure for AIDS, it has greatly improved the health of many people with AIDS and it reduces the amount of virus circulating in the blood to nearly undetectable levels. Researchers, however, have shown that HIV remains present in hiding places, such as the lymph nodes, brain, testes and retina of the eye, even in people who have been treated.

### **Can massage therapy help clients infected with HIV/AIDS?**

Although many massage therapists may be hesitant in treating HIV infected clients, studies have shown that massage and bodywork can indeed benefit people living with HIV/AIDS. There is nothing massage therapists and body workers can do to cure the HIV infection; however, massage therapy treatment can be used to help the symptomatology of HIV/AIDS.

Therapeutic massage is not only beneficial in relieving a variety of physical symptoms including chronic pain, but it may also be effective for relaxation and stress reduction. Massage can help people with HIV/AIDS relieve chronic muscle tension and ease the mental and emotional stress that accompany the illness.

Massage therapy may also play a role in improved immune function in HIV/AIDS infected clients. The factors that contribute to immune enhancement in HIV/AIDS infected clients are:

- pressure of strokes
- frequency
- length of massage

In studies, a single massage treatment on a healthy person has indicated substantial increases in the NKCA (natural killer cell activity). The effect on the immune system was greater when pressure was applied with multiple massages lasting for a longer duration of time. Deep strokes, pressure points and trigger-point massage may improve immune function in those living with HIV/AIDS.

For the treatment to prove beneficial when working with HIV/AIDS clients, it is recommended that the therapist use a full body stress management approach. The techniques should include pressure strokes, such as acupressure, trigger-point therapy and deep strokes, which should last approximately one hour and be performed at least once or twice weekly over an extended period of months for immune-enhancing results.

### **Important factors for massage therapists to consider**

It is important for you to always remember that HIV/AIDS is only transmitted through blood to blood contact and bodily fluids. Most massage therapists and body workers do not come into contact with their client's blood and bodily fluids on a regular basis. However, there are some key points to keep in mind if you choose to work on a client with HIV or AIDS. These are also valid points when working on any client in your practice. There may be clients who come to you and do not know they are infected with HIV or do not tell you that they are infected. Universal precautions for every client are the best policy to follow in order to keep you protected.

- Use thorough intake forms – Most intake forms will ask the client if they have any serious or chronic illnesses or medical conditions. Read carefully through the intake form and look for things that may cause your caution. In some states, you may be prohibited from directly asking your client if they are infected with HIV or AIDS. If you are uncomfortable asking or prohibited from asking, a thorough intake form should give you the information you need to proceed with your treatment plan. Medical history and intake forms will also tell you about any other medical conditions a client may have that you will need to be cautious of, such as hepatitis, cancer, immune disorders, skin conditions, etc.

When you have good information from an intake form you protect yourself from potential dangers such as performing massage treatment on a contra-indicated area, going outside your scope of practice in treating a client and potentially harming yourself or a client during the massage.

- Educate yourself about HIV/AIDS and other potentially dangerous diseases – As a massage therapist, the more you know about HIV, the better you will be prepared if you encounter it.
- Always avoid open wounds, cuts, lesions, rashes, boils and acne on every client, HIV positive or not. You do not want to expose yourself to infection or introduce your clients to possible infection by treating an area with an open wound.
- Consult with your client's physician – If your client has a pertinent medical condition (HIV/AIDS, cancer, immune disorders, chronic illnesses), it is acceptable to consult with their family physician before starting a treatment plan. Discussing whether or not massage therapy is contra-indicated with their physician can help you in formulating a treatment plan and can protect you from malpractice or going outside of your scope of practice.
- Use gloves – The use of latex gloves or latex free gloves is common in the medical community and will protect both you and your clients. If you are uncomfortable for any reason with a client, feel free to use gloves. You may want to use a water based lubricant with latex gloves as some oils can break down the latex material.

The CDC recommends when removing gloves, peel them down by turning them inside out. This will keep the wet side on the inside, away from your skin and other people. When you take the gloves off, wash your hands with soap and water right away.

- If you are comfortable using your bare hands, be sure that they are clean and free of cuts, scratches or wounds. If you do have an open sore, cut or scratch on your hands, arms or elbows, use a protective barrier to protect both you and your client.
- When cleaning and/or changing your drape, face cradle cover, sheets, massage table or massage chair, if you find an unidentifiable material, use latex gloves and thoroughly disinfect your sheets and table or chair. Disinfecting can be done by using a 10% bleach solution for 10 minutes or a 70% alcohol solution for 10 minutes.
- Always wash and clean your drape, sheets, face cradle covers and towels after each use. You do not want to introduce germs to other clients or yourself while performing a massage session.
- If you are uneasy working on any client, whether or not they are HIV positive, refer them elsewhere or simply tell them you cannot work on them. You have the right to refuse service to any client for a number of reasons such as, you do not feel they will benefit from your treatment, you feel that you are going outside of your scope of practice in treating them and/or the client has contra-indications to massage therapy. If you feel that you will not be able to work on the client to the best of your ability, it is acceptable/better to refer them to the appropriate healthcare professional.

**References:**

Center for Disease Control, <http://www.cdc.gov/hiv/>

San Francisco AIDS Foundation, [http://www.sfaf.org/aids101/hiv\\_disease.html](http://www.sfaf.org/aids101/hiv_disease.html)

Avert, <http://www.avert.org/>



## Communicable Disease - HIV/AIDS Exam

1. HIV differs from other viruses in that HIV:
  - A. Cannot survive in the air
  - B. Cannot survive in food
  - C. Is not spread through casual human-to-human contact
  - D. All of the above
2. The earliest known case of HIV in a human was documented in:
  - A. 1982
  - B. 1959
  - C. 1979
  - D. 1949
3. HIV has existed in the United States since at least:
  - A. The late 1950's
  - B. The mid to late 1960's
  - C. The mid to late 1970's
  - D. The late 1980's
4. What is AIDS?
  - A. An acquired immunodeficiency syndrome characterized by a group of symptoms, including infections and/or cancer, caused by the HIV virus
  - B. A congenital immunodeficiency syndrome characterized by a group of symptoms, including infections and/or cancer, which can be caused by many viruses
  - C. An acquired immunodeficiency syndrome that does not weaken the immune syndrome, caused by the HIV virus
  - D. All of the above
5. Once an HIV positive test result has been given, a doctor can estimate how long a person has been infect with the virus.
  - A. True
  - B. False
6. The HIV virus attacks which of the following types of cells in the body?
  - A. T Cells
  - B. B Cells
  - C. Nerve cells
  - D. All of the above
7. How many people in the U.S. does the Center for Disease Control estimate were infected with HIV/AIDS at the end of 2003?
  - A. 500,000
  - B. 900,000
  - C. 1,100,000
  - D. 3,000,000
8. How can HIV be spread?
  - A. Through contact with an infected person's blood
  - B. Through intercourse with an infected person
  - C. By sharing needles with an injection drug user who is HIV positive
  - D. All of the above

9. Which of the following fluids are known to carry the HIV virus?
  - A. Breast milk
  - B. Semen
  - C. Vaginal fluid
  - D. All of the above
  
10. Although considered low risk, a person can contract HIV through open mouth kissing.
  - A. True
  - B. False
  
11. Using a latex barrier/condom has been proven to be effective in preventing HIV transmission during:
  - A. Oral sex
  - B. Anal sex
  - C. Vaginal sex
  - D. All of the above
  
12. For intravenous drug users, which of the following is a potential way that HIV/AIDS can be transmitted?
  - A. Using blood contaminated syringes to prepare drugs
  - B. Reusing water
  - C. Reusing bottle caps, spoons or other containers used to dissolve drugs in water
  - D. All of the above
  
13. How many documented cases exist of HIV being transmitted during participation in sports?
  - A. 2
  - B. 0
  - C. 5
  - D. 10
  
14. You can contract HIV from being bitten by a mosquito.
  - A. True
  - B. False
  
15. The United States began testing its blood supply in \_\_\_\_\_ and is now considered to be among the safest in the world.
  - A. 1981
  - B. 1984
  - C. 1985
  - D. 1989
  
16. In order to minimize your exposure to HIV in a massage setting, you can:
  - A. Wear latex gloves
  - B. Avoid massaging open cuts, sores, rashes or wounds on clients
  - C. Ensure that you have no open cuts, sores, rashes or wounds that may come in contact with your client
  - D. All of the above

17. In order to minimize your exposure to HIV in a personal setting, you can:
- A. Abstain from sexual intercourse
  - B. Always use latex condoms
  - C. Remain in a long-term mutually monogamous relationship with a partner who has tested negative for HIV
  - D. All of the above
18. The only way to determine if you or any person has HIV is to be tested?
- A. True
  - B. False
19. Many people infected with HIV do not experience symptoms at all for 10 years or more.
- A. True
  - B. False
20. Which of the following is the correct order of the stages of HIV infection?
- A. Seroconversion, primary infection, asymptomatic stage, late stage HIV and early to medium stage HIV
  - B. Asymptomatic stage, primary infection, seroconversion, early to medium stage HIV and late stage HIV
  - C. Primary infection, seroconversion, asymptomatic stage, early to medium stage HIV and late stage HIV
  - D. Primary infection, asymptomatic stage, seroconversion, early to medium stage HIV and late stage HIV
21. What is seroconversion?
- A. The first stage of HIV infection when the virus first establishes itself in the body
  - B. The second stage of HIV infection when the person's immune system responds to the infection by producing antibodies to the virus
  - C. The fourth stage of HIV infection when the person's immune system responds to the infection by producing antibodies to the virus
  - D. The second stage of infection when the person's immune system is compromised and disease symptoms begin to appear
22. The class of drugs used in treating HIV that is designed to interrupt RNA conversion at an early stage of virus replication is called:
- A. HAART
  - B. Protease inhibitors
  - C. Reverse transcriptase inhibitors
  - D. Fusion inhibitors
23. Massage therapy has been shown to benefit which of the following in HIV/AIDS patients?
- A. Massage therapy, along with drug therapy, will cure HIV
  - B. Chronic pain, stress and immune function
  - C. Massage therapy is contraindicated in all HIV infected persons
  - D. All of the above
24. Factors that contribute to the benefit of massage on immune function in HIV infected persons depend on which of the following?
- A. Pressure of strokes used
  - B. Frequency of massage treatment
  - C. Length of massage therapy session
  - D. All of the above

25. Universal precautions for massage therapists include:
- A. The use of intake forms
  - B. Disinfecting sheets, drapes and massage table/chair
  - C. Consulting with the client's primary care physician
  - D. All of the above
26. Why is obtaining a thorough intake form on the first visit important for massage therapists?
- A. It will inform you of any medical conditions the client may have
  - B. It will help you in formulating the best treatment plan for your client
  - C. It will protect you as a massage therapist
  - D. All of the above
27. According to the Center for Disease Control, what is the correct procedure for removing gloves?
- A. Peel them down from your wrist by turning them inside out to keep the wet side on the inside away from your skin
  - B. Pull the glove carefully off of each finger at a time
  - C. As long as you wear gloves, it does not matter how you remove them
  - D. Cut them off with scissors to avoid the wet side from touching your skin
28. An example of a disinfecting process is:
- A. A 5% bleach solution for 10 minutes
  - B. A 70% alcohol solution for 10 minutes
  - C. A 10% alcohol solution for 10 minutes
  - D. A 70% bleach solution for 10 minutes

This completes the Communicable Disease - HIV/AIDS exam.