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Frequently Asked Questions about HIV/AIDS: Transmission and Prevention

How is HIV passed from one person to another?

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

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

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

- By having sexual intercourse (anal, vaginal, or oral sex) 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 babies before or during birth, or through breast-feeding after birth

HIV also can be transmitted through transfusions 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.

Some health-care workers have become infected after being stuck with needles containing HIV-infected blood or, less frequently, after infected blood contact with the worker's open cut or through splashes into the worker's eyes or inside their nose. There has been only one instance of patients being infected by an HIV-infected health care worker. This involved HIV transmission from an infected dentist to six patients.

Can I get HIV from kissing on the cheek?

HIV is not casually transmitted, so kissing on the cheek is very safe. Even if the other person has the virus, your unbroken skin is a good barrier. No one has become infected from such ordinary social contact as dry kisses, hugs and handshakes

Can I get 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 suggests that a woman became infected with HIV from her sex partner through exposure to contaminated blood during open-mouth kissing.

Can I get HIV from someone performing oral sex on me?

Yes, it is possible for you to become infected with HIV through receiving oral sex. If your partner has HIV, blood from their mouth may enter the urethra (the opening at the tip of the penis), the vagina, the anus, or directly into the body through small cuts or open sores. 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 you choose to have oral sex:

- Use a latex condom on the penis; or
- If you or your partner is allergic to latex, a plastic (polyurethane) condom can be used.

Research has shown the effectiveness of latex condoms used on the penis for preventing the transmission of HIV. Condoms are not risk-free, but they greatly reduce your risk of becoming HIV-infected if your partner has the virus.

If you choose to have oral sex and you are female:

- Use a latex barrier (such as a cut-open condom that makes a square or a dental dam) between their mouth and the vagina. Plastic food wrap can also be used as a barrier. The barrier reduces the risk of blood entering the body through the vagina.

Can I get HIV from having vaginal sex?

Yes, it is possible to become infected with HIV through vaginal 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, pre-seminal fluid, or vaginal fluid of a person infected with the virus. The lining of the vagina can tear and possibly allow HIV to enter the body. Direct absorption of HIV through the mucous membranes that line the vagina also is a possibility.

The male may be at less risk for HIV transmission than the female through vaginal intercourse. However, HIV can enter the body of the male through his 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). See also "Is there a connection between HIV and other sexually transmitted diseases?"

If you choose to have vaginal intercourse, use a latex condom to help protect both you and your partner from the risk of HIV and other STDs. 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 I get HIV from anal sex?

Yes, 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. However, 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.

Having unprotected (without a condom) anal sex is considered to be a very risky behavior. 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 a water-based lubricant in addition to the condom to reduce the chances of the condom breaking.

How effective are latex condoms in preventing HIV?

Studies have shown that latex condoms are highly effective in preventing HIV transmission when used consistently and correctly. These studies looked at uninfected people considered to be at very high risk of infection because they were involved in sexual relationships with HIV-infected people. The studies found that even with repeated sexual contact, 98 percent to 100 percent of those people who used latex condoms correctly and consistently did not become infected.

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

Yes. Having a sexually transmitted disease (STD) can increase a person's risk of becoming infected with HIV, whether the STD causes open sores or breaks in the skin (e.g., syphilis, herpes, chancroid) or does not cause breaks in the skin (e.g., chlamydia, gonorrhea).

If the STD infection causes irritation of the skin, breaks or sores may make it easier for HIV to enter the body during sexual contact. Even when the STD causes no breaks or open sores, the infection can stimulate an immune response in the genital area that can make HIV transmission more likely.

In addition, if an HIV-infected person also is infected with another STD, that person is three to five times more likely than other HIV-infected persons to transmit HIV through sexual contact.

Not having (abstaining from) sexual intercourse is the most effective way to avoid STDs, including HIV. For those who choose to be sexually active, the following HIV prevention activities are highly effective:

- Engaging in sex that does not involve vaginal, anal or oral sex
- Having intercourse with only one uninfected partner
- Using latex condoms every time you have sex

Why is injecting drugs a risk for HIV?

At the start of every intravenous injection, blood is introduced into needles and syringes. HIV can be found in the blood of a person infected with the virus. The reuse 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.

In addition, sharing drug equipment (or "works") can be 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
- Reusing 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.

How can people who use injection drugs reduce their risk for HIV infection?

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 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 prior to injection with a new alcohol swab
- 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.

Injection drug users and their sex partners also should take precautions, such as using condoms consistently and correctly, to reduce risks of sexual transmission of HIV. Persons who continue to inject drugs should periodically be tested for HIV.

Can I get HIV from getting a tattoo or through body piercing?

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 instruments that are intended to penetrate the skin be used once, then disposed of or thoroughly cleaned and sterilized.

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 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

Are health care workers at risk of getting HIV on the job?

The risk of health care workers getting HIV on the job is very low, especially if they carefully follow universal precautions (i.e., using protective practices and personal protective equipment to prevent HIV and other blood-borne infections). It is important to remember that casual, everyday contact with an HIV-infected person does not expose health care workers or anyone else to HIV.

For health care workers on the job, the main risk of HIV transmission is through accidental injuries from needles and other sharp instruments that may be contaminated with the virus. Even this risk is small, however. Scientists estimate that the risk of infection from a needle jab is less than 1 percent; a figure based on the findings of several studies of health care workers who received punctures from HIV-contaminated needles or were otherwise exposed to HIV-contaminated blood.

For more information on universal precautions or occupational risks of HIV exposure, call the CDC National Prevention Information Network (operators of the National AIDS Clearinghouse) at (800) 458-5231.

Are patients in a dentist's or doctor's office at risk of getting HIV?

Although HIV transmission is possible in health care settings, it is extremely rare. Medical experts emphasize that the careful practice of infection control procedures, including universal precautions, protects patients as well as health care providers from possible HIV infection in medical and dental offices.

In 1990, the CDC reported on an HIV-infected dentist in Florida who apparently infected some of his patients while doing dental work. Studies of viral DNA sequences linked the dentist to six of his patients who were also HIV-infected. The CDC has as yet been unable to establish how the transmission took place.

Further studies of more than 22,000 patients of 63 health care providers who were HIV-infected have found no further evidence of transmission from provider to patient in health care settings.

For more information on universal precautions or occupational risks of HIV exposure, call the CDC National Prevention Information Network (operators of the National AIDS Clearinghouse) at (800) 458-5231.

Should I be concerned about getting infected with HIV while playing sports?

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 I get HIV from casual contact (shaking hands, hugging, using a toilet, drinking from the same glass, or the sneezing and coughing of an infected person)?

No. HIV is not transmitted by day-to-day contact in the workplace, schools, or social settings. HIV is not transmitted through shaking hands, hugging or a casual kiss. You cannot become infected from a toilet seat, a drinking fountain, a doorknob, dishes, drinking glasses, food or pets.

A small number of cases of transmission have been reported in which a person became infected with HIV as a result of contact with blood or other body secretions from an HIV-infected person in the household. Although contact with blood and other body substances can occur in households, transmission of HIV is rare in this setting. However, persons infected with HIV and persons providing home care for those who are HIV-infected should be fully educated and trained regarding appropriate infection-control techniques.

HIV is not an airborne or food-borne virus, and it does not live long outside the body. HIV can be found in the blood, semen, or vaginal fluid of an infected person. The three main ways HIV is transmitted are:

- Through having sex (anal, vaginal, or oral) with someone infected with HIV
- Through sharing needles and syringes with someone who has HIV
- Through exposure (in the case of infants) to HIV before or during birth, or through breast feeding

For more information about providing home care or living with a person who is HIV-infected, call the CDC National Prevention Information Network (operators of the National AIDS Clearinghouse) at (800) 458-5231 and ask for the publication "Caring for Someone with AIDS: Information for Friends, Relatives, Household Members, and Others Who Care for a Person With AIDS at Home."

Can I get infected with HIV from mosquitoes?

No. From the start of the HIV epidemic there has been concern about HIV transmission of the virus by biting and bloodsucking insects, such as mosquitoes. However, studies conducted by the CDC and elsewhere have shown no evidence of HIV transmission through 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.

How safe is the blood supply in the United States?

The U.S. blood supply is among the safest in the world. Nearly all people infected with HIV through blood transfusions received those transfusions before 1985, the year HIV testing began for all donated blood.

The Public Health Service has recommended an approach to blood safety in the United States 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. Blood and blood products that test positive for HIV are safely discarded and are not used for transfusions.

An estimated one in 450,000 to one in 660,000 donations per year are infectious for HIV but are not detected by current antibody screening tests. In August 1995, the FDA recommended that all donated blood and plasma also be screened for HIV-1 p24 antigen. The improvement of processing methods for blood products also has reduced the number of infections resulting from the use of these products. Currently, the risk of infection with HIV in the United States through receiving a blood transfusion or blood products is extremely low and has become progressively lower, even in geographic areas with high HIV prevalence rates

Source: National Center for HIV, STD and TB Prevention, Centers for Disease Control and Prevention