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HIV Transmission

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How HIV is Transmitted

HIV transmission can be prevented! There are ways to avoid, or at least reduce, contact with body fluids that transmit HIV. This fact sheet explains how.

Many people still do not understand how HIV is passed, or transmitted, from one person to another. Knowing the basics helps you avoid acquiring HIV. If you are living with HIV, these basics help you avoid transmitting HIV to someone else.

HIV is transmitted (spread) through contact with the body fluids below. Contact here means that the

body fluid gets into the other person's bloodstream or a mucous membrane, such as the inside of the mouth or the vagina.

- Blood – including menstrual blood and any blood in saliva (spit), urine (pee), and feces (poop)
- Semen (cum) and other male sexual fluids (pre-cum)
- Vaginal fluids
- Breast milk

Taking HIV drugs can be a part of safer sex practices.

When a person living with HIV is taking HIV drugs and their [viral load](#) has stayed at undetectable levels (not enough HIV in their bloodstream for a standard test to measure), that person cannot sexually transmit HIV to a partner. This is called treatment as prevention, and is often represented in the HIV community by the simple phrase “undetectable equals untransmittable,” or "U=U." For more information on this development, see our fact sheet [Undetectable Equals Untransmittable: Building Hope and Ending HIV Stigma](#).

HIV can also be passed on if the body fluids below enter another person's bloodstream or mucous membranes. However, usually only healthcare workers come into contact with these fluids. They are:

- Cerebrospinal fluid around the brain and spinal cord
- Synovial fluid around the joints
- Amniotic fluid around a developing fetus (or baby in the womb)

HIV is **not** transmitted through contact with these body fluids:

- Sweat
- Tears
- Saliva (spit)
- Feces (poop)
- Urine (pee)

In other words, you **cannot** get HIV by touching or hugging someone who is living with HIV, kissing someone living with HIV, drinking or eating from the same cups or utensils as a person living with HIV, or by using a toilet also used by someone living with HIV.

Methods of Transmission

Today, the most common ways HIV is passed from one person to another are:

- Re-using and sharing needles or other [equipment for injecting drugs](#) (including steroids or hormones)
- Unprotected/unsafe vaginal or anal sex, which means:
 - sex without using [condoms](#) or other barriers
 - sex when an HIV-negative partner is not taking pre-exposure prophylaxis ([PrEP](#)) as prevention and no condoms are used
 - sex when a partner living with HIV is not taking HIV drugs and/or has a detectable viral load, and no prevention tools (PrEP, condoms) are used
- Perinatal or mother-to-child (during [pregnancy](#), birth, or [breast/chestfeeding](#))

For more detailed information about how HIV drugs prevent HIV transmission, please see our fact sheet on [HIV Treatment as Prevention](#).

Re-using and Sharing Needles

- **Injecting drugs (including steroids or hormones):** Many people acquire HIV when they share the equipment used to inject heroin, methamphetamines, steroids, hormones, or other substances. Re-using syringes, needles, water, spoons, "cookers," or "cottons" can transmit HIV. If at all possible, use new syringes and needles only from reliable sources, such as needle exchange programs or pharmacies. Some cities offer free needle and syringe exchange programs. For more information, see our fact sheet on [Cleaning Equipment for Injecting Drugs](#).
- **Tattoos or body piercings:** Tattoos or body piercings should always be done by a licensed professional whose equipment, including ink, is sterile. The US Centers for Disease Control and Prevention (CDC) recommends instruments be used only once and then thrown away. Reusable instruments must be sterilized between uses. Using alcohol to clean instruments is not enough. Proper sterilization means that instruments are treated with steam, or autoclaved.

Unprotected/Unsafe Sex

Unsafe sex is sex without condoms or other barriers, and without using HIV treatment-as-prevention methods. Unsafe sex can make you and/or your partner vulnerable to acquiring HIV or other [sexually transmitted infections or diseases](#) (STIs or STDs). [Safer sex](#) (sex using [condoms](#), other barriers, and/or treatment-as-prevention methods consistently and correctly) is the most effective way to protect yourself and your partner.

Taking HIV drugs can be a part of safer sex practices. For people living with HIV, taking HIV drugs regularly can reduce their [viral load](#) to undetectable levels. This eliminates the chance of HIV transmission to others. Achieving and keeping an undetectable viral load makes it impossible for their blood, vaginal fluids, and semen (cum) to pass HIV on to sexual partners.

For people who are HIV-negative, taking HIV drugs as pre-exposure prophylaxis (PrEP) can reduce the chance of acquiring HIV. For more information, please see our fact sheet on [PrEP for Women](#).

These methods are part of HIV treatment as prevention (TasP), also discussed above. TasP does not prevent transmission of other STIs or STDs.

Barriers, such as condoms (male and female), dental dams (thin squares of latex), and latex or nitrile gloves, also greatly reduce the chance of HIV (or other STI) transmission through sex (oral, anal, or vaginal).

Which common sexual activities are most likely to transmit HIV when safer sex practices are not used? Listed from most to least likelihood of HIV transmission:

Receptive anal sex ("bottoming"): Taking a penis through one's anus ("butt") and into one's rectum remains the riskiest activity. This is so because small tears in the rectum are likely; these tears allow semen ("cum") to come into direct contact with the bloodstream.

Receptive vaginal intercourse: This refers to taking a penis into one's vagina. HIV is transmitted from penis to vagina much more easily than from vagina to penis.

Insertive anal sex ("topping"): Putting your penis into someone else's anus and rectum can expose you to HIV

Insertive vaginal intercourse: Putting your penis into a vagina, especially when the person is menstruating, can expose you to HIV

Giving oral sex: Using your mouth to lick, suck, or bite another person's genitals (penis, vagina, or anus) can expose you to HIV. Swallowing semen ("cum"), licking menstrual blood, and having bleeding gums, mouth ulcers, or gum disease will increase your chance of acquiring HIV.

Receiving oral sex: Having your genitals licked, sucked, or bitten carries less chance of HIV transmission than giving oral sex. However, you can acquire HIV from your partner, especially if they have bleeding gums, mouth ulcers, or gum disease.

Sharing sex toys without sterilizing them or using a new condom: This can allow HIV to be

transmitted from the first partner to the next one who uses the toy

Mutual masturbation (hand jobs), fingering, and fisting (using a hand to penetrate the anus or vagina): These are extremely low risk, as long as your hand has no open cuts or sores

Sexual assault or rape (including by an [intimate partner](#)) can result in transmission if the attacker is living with HIV. Vulnerability increases when rape involves anal penetration, force, and/or multiple attackers. Some forced sexual acts that cause wounds can render a victim very highly vulnerable to acquiring HIV.

Survivors of sexual assault or rape who are not already living with HIV should be routinely offered PEP (post-exposure prophylaxis; also called non-occupational PEP, or nPEP) in emergency rooms. This 28-day treatment with HIV drugs greatly reduces the chances of acquiring HIV. PEP is another form of TasP.

To be effective, PEP must be started within the first 72 hours of exposure. The earlier treatment is started, the more effective it will be. If PEP is not offered in the emergency room or clinic after a rape or sexual assault, do not be afraid to ask for it.

PrEP, another form of TasP discussed above, involves taking medications regularly to prevent acquiring HIV if exposed to the virus. For women who cannot ask their partner to use a condom because of the threat of violence from him or her, PrEP can allow them to protect themselves from acquiring HIV without their partner knowing.

Important: *If you are feeling threatened right now, call 911 in the US or the National Domestic Violence hotline in the US at 800-799-SAFE [1-800-799-7233; or 1-800-787-3224 (TTY)], or text START to 88788. You can also search for a safe space online at [Domestic Shelters](#).*

Perinatal Transmission

Medical care and HIV drugs given during pregnancy can virtually eliminate the chance of a baby getting HIV from its birthing parent.

Women living with HIV can pass the virus to their babies while [pregnant](#), during birth, or by breastfeeding. This is called perinatal or vertical transmission and is also known as mother-to-child transmission. Medical care and HIV drugs given during pregnancy can virtually eliminate the chance of a baby getting HIV from its birthing parent.

Exclusive breastfeeding (no mixed feeding, such as some breast milk and some gripe or sugar water) while taking HIV drugs is the standard of care for birthing parents living with HIV in resource-limited areas of the world. It has been shown to increase survival and well-being of babies, and the likelihood of HIV transmission with this method is less than 1 percent. In contrast, when neither parent nor infant is taking any HIV treatment, the chance of HIV transmission through breastfeeding is 15 to 20 percent over two years.

In high-resource settings like the US, Canada, and western Europe, general HIV and public health guidelines have discouraged breastfeeding among women living with HIV. These guidelines are steadily changing due to increased awareness and evidence of the very low likelihood of a baby acquiring HIV from the breast milk of a parent taking HIV drugs, coupled with the numerous benefits of breast/chestfeeding for babies and lactating parents.

A significant change occurred in 2023 when the US perinatal HIV clinical guidelines were updated to remove language discouraging breastfeeding and reflect current knowledge about low likelihood of HIV transmission. For more information, see our fact sheet [Can I Breastfeed While Living With HIV?](#)

It is also important not to feed your baby food that has been chewed by someone who is living with HIV (pre-masticated). This can transmit HIV to your child.

Other Types of Transmission

In the past, HIV was transmitted by transfusion with blood products, such as whole blood or the "factor" used by hemophiliacs. At that time, many people acquired HIV this way. The blood supply is now much more strictly tested and controlled in most countries. The odds of acquiring HIV from receiving blood or blood factor in countries like the US, the UK, and Canada are extremely low. For example, statistics from the US show that a person is more likely to be killed by a lightning strike than they are to acquire HIV from a blood transfusion. However, not every country screens all blood donations for HIV.

It is important for anyone receiving a private donor's sperm for artificial insemination to have the donor tested for HIV.

It is also possible to acquire HIV from skin grafts or transplanted organs taken from people living with HIV. Again, the likelihood is considered very low, as these "bodily products" must be strictly tested in the same way as blood products. Semen donations collected by sperm banks for artificial insemination are also considered "bodily products" and rigorously tested in high-resource countries. Private semen samples that are not processed by sperm banks or similar organizations may not have been tested. It is important for anyone receiving a private donor's sperm for artificial insemination to have the donor tested for HIV.

Some people, mostly healthcare workers, acquire HIV by accidentally sticking themselves with a needle (needle stick) with infected blood, or through other medical accidents. This is a very small percentage of overall seroconversions. When exposed to fluid or bodily products that may carry HIV while on the job, healthcare workers should be offered occupational [post-exposure prophylaxis](#) (oPEP) immediately.

If you are getting breast milk from a milk bank, it is important to ask if the bank tests the milk for HIV. Also, if your baby is getting breast milk from a wet nurse, it is important to make sure that she tests negative for HIV before giving her milk to your baby.

Avoiding Transmission

HIV cannot be transmitted except when certain body fluids are exchanged. You can greatly reduce the chance of transmission by:

- Knowing your HIV status so you can take steps to avoid transmitting HIV if you are living with the virus; for more information, see our fact sheet on [HIV Testing](#)
- Staying on your HIV drug regimen if you are living with HIV. Having an undetectable viral load [prevents HIV transmission to sexual partners](#)
- Practicing [safer sex](#), including taking [PrEP](#)
- Using new or [clean needles](#) and other equipment for any injections
- Not injecting drugs

You do not need to be afraid of getting or passing HIV by casual contact. Remember, HIV is **not** transmitted by:

- Hugs
- Dancing

- Sharing food or drinks
- Using a toilet, shower, bath, or bed
- Kissing
- Sharing exercise equipment
- Bug bites

Additional Resources

Select the links below for additional material related to HIV transmission.

- [How Do You Get HIV? \(Be in the Know\)](#)
- [HIV Transmission and Risks \(POZ\)](#)
- [10 Common Fears About HIV Transmission \(TheBody.com\)](#)
- [HIV Transmission \(aidsmap\)](#)
- [Transmission & Prevention \(aidsmap\)](#)
- [How HIV Spreads \(US Centers for Disease Control and Prevention\)](#)
- [How Is HIV Transmitted? \(HIV.gov\)](#)
- [HIV and AIDS – Basic Facts \(UNAIDS\)](#)
- [The Basics of HIV Prevention \(HIVinfo\)](#)
- [Estimated HIV Risk Per Exposure \(aidsmap\)](#)
- [HIV Risk Behaviors \(US Centers for Disease Control and Prevention\)](#)
- [HIV Can Spread Through Sexual Contact Between Women \(US National Public Radio\)](#)
- [Blood Safety and Availability \(World Health Organization\)](#)
- [How HIV Is Spread \(US Office on Women's Health\)](#)
- [HIV in Women Who Have Sex With Women \(WebMD\)](#)
- [How HIV Is Transmitted \(Terrence Higgins Trust, United Kingdom\)](#)
- [Impossible Routes of HIV Transmission \(aidsmap\)](#)
- [HIV and AIDS: Causes \(UK National Health Service\)](#)
- [HIV Transmission \(CATIE\)](#)



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