HIV Transmission

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How HIV Spreads

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, or spread, through contact with the following body fluids:

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

When a person living with HIV is taking HIV drugs and their viral load [4] has reached undetectable levels (not enough HIV in their bloodstream for a test to measure), that person cannot sexually transmit HIV to a partner [5]. 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 [5].

HIV is also spread through contact with the body fluids below. However, usually only health care workers come into contact with these fluids. These fluids 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 spread 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 [6] (including steroids or hormones)
- Unprotected/unsafe sex, which means:
  - sex without using condoms [7] or other barriers, such as dental dams
  - treatment as prevention [8]
  - sex when a HIV-negative partner is not taking pre-exposure prophylaxis (PrEP [9])
  - sex when a partner living with HIV is not taking HIV drugs and/or has a detectable viral load, and none of the prevention tools above are used
- Perinatal or mother-to-child (during pregnancy [10], birth, or breastfeeding [11])

For more detailed information about HIV drugs and HIV transmission, please see our fact sheet on HIV Treatment as Prevention [8].

Re-using and Sharing Needles

- Injecting drugs (including steroids or hormones): Many people get 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 spread HIV. Be sure to use new syringes and needles only from reliable sources, such as needle exchange programs or pharmacies. Many cities offer free needle and syringe exchange...
programs. For more information, see our fact sheet on Cleaning Equipment for Injecting Drugs [6].

- **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 put you and/or your partner at risk for HIV or other sexually transmitted infections or diseases [12] (STIs or STDs). Safer sex [13] (sex using condoms [7], 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. For people living with HIV, taking HIV drugs reduces the risk of HIV transmission to others. HIV drugs can reduce their viral load [4] to undetectable levels. This makes it impossible for their blood, vaginal fluids, and semen (cum) to pass HIV on to others.

For people who are HIV-negative, taking HIV drugs as pre-exposure prophylaxis (PrEP) can reduce their risk of acquiring HIV if they are exposed to the virus. For more information, please see our fact sheet on PrEP for women [9].

These methods are part of what is known as HIV treatment as prevention (TasP). 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 risk 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 is not used? Listed from most to least risky:

1. **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.
2. **Insertive vaginal intercourse:** This refers to taking a penis into one's vagina. HIV is transmitted from men to women much more easily than from women to men.
3. **Insertive anal sex ("topping"):** Putting a penis into someone else's anus and rectum can expose you to HIV.
4. **Insertive vaginal intercourse:** Putting a penis into a vagina, especially when the woman is menstruating, can expose you to HIV.
5. **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 risk of getting HIV.
6. **Receiving oral sex:** Having your genitals licked, sucked, or bitten is less risky than giving oral sex. However, you can get HIV from your partner, especially if your partner has bleeding gums, mouth ulcers, or gum disease.
7. **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.
8. **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 [14]) can result in transmission if the
attacker is living with HIV. The risk increases when rape involves anal penetration, force, and/or multiple attackers. Some forced sexual acts that cause wounds can place a victim at very high risk.

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, is a prevention method that can be used without a partner being aware of it. For women who cannot ask their partner to use a condom because of the threat of violence from their partner, PrEP can allow a woman to protect herself from HIV transmission without her 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)]. You can also search for a safe space online at Domestic Shelters [15].

### Perinatal Transmission

Women living with HIV can pass the virus to their babies while pregnant [10], 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 risk of a baby getting HIV from its mother.

In resource-rich countries such as the US, the World Health Organization recommends that mothers living with HIV not breastfeed their babies. In other countries, where formula is unavailable or clean water sources are unreliable, it recommends that mothers breastfeed their babies exclusively (no mixed feeding, such as some breast milk and some gripe or sugar water). 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. For more information, see our fact sheet Can I Breastfeed While Living With HIV? An Overview of Infant Feeding Options [11].

### Other Types of Transmission

In the past, HIV was spread by transfusion with blood products, such as whole blood or the "factor" used by hemophiliacs. 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 also possible to get HIV from skin grafts or transplanted organs taken from people living with HIV. Again, the risk is considered very low, as these "body 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 health care 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. According to the US Centers of Disease Control and Prevention (CDC), only three in every 1,000 exposures to HIV-infected blood at work, if left
untreated, will result in the worker acquiring HIV. When exposed to fluid or body products that may carry HIV while on the job, health care 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 risk 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
- Not having sex
- Not injecting drugs
- Using new or clean needles and other equipment for any injections

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

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Additional Resources

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

- How Do You Get HIV? (Avert) [46]
- HIV Transmission and Risks (POZ) [47]
- 10 Common Fears about HIV Transmission (TheBody) [48]
- Transmission & Prevention (AIDSmap) [49]
- HIV Transmission (CDC) [50]
- How Is HIV Transmitted? (HIV.gov) [51]
- Blood Transfusions & Transplants and HIV (Avert) [52]
- Estimated Risk Per Exposure (AIDSmap) [53]
- HIV Risk Behaviors (CDC) [54]
- HIV Can Spread Through Sexual Contact Between Women (NPR) [55]
- Blood Safety and Availability (World Health Organization) [56]

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