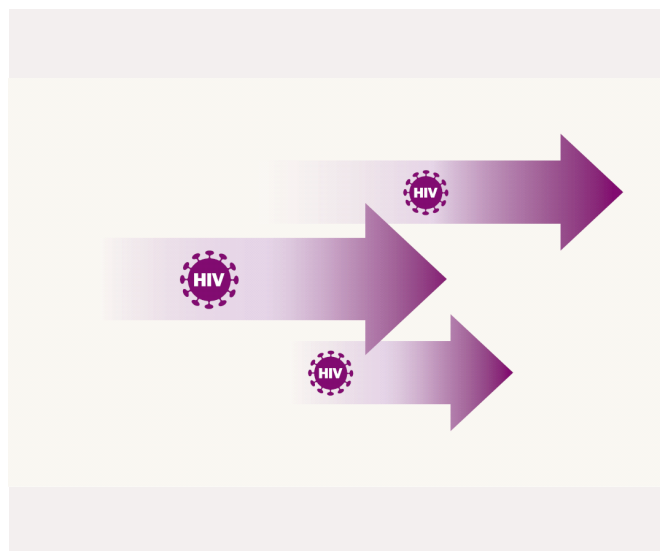


Factsheet HIV transmission

Key points

- The two main ways in which HIV is passed on are unprotected vaginal and anal sex.
- Condoms, PrEP and HIV treatment are effective ways of preventing HIV transmission.
- HIV can sometimes be transmitted through oral sex.



For HIV to be transmitted from one person to another, four conditions need to be met. If any one of these conditions are not met, HIV cannot be passed on.

Presence: One of the people involved must be HIV-positive and HIV must be present in the person's body fluid. HIV may be infectious in five body fluids: blood, semen, secretions in the vagina, secretions in the rectum, and breast milk. (HIV is *not* infectious in saliva, urine, faeces or tears.)

Quantity: HIV must be present at sufficient levels to cause infection. Medication used to treat HIV can reduce the level of HIV to extremely low, 'undetectable' levels.

Route: The body fluid containing HIV has to get into the body of the other person through an effective route. Unbroken skin forms an effective barrier, but an open wound could provide a point of entry. Mucous membranes are important points of entry – these are the moist membranes lining body cavities that are not protected by dry skin, including the rectum, vagina, urethra, and the underside of the foreskin.

Susceptibility: Finally, immune system cells which are vulnerable to infection must be present at the site of entry. Mucous membranes typically contain many of these cells.

When all of these four conditions are met, HIV may be transmitted. This is a possibility, rather than a certainty – HIV is not transmitted on each and every occasion.

Higher-risk activities

The following are well-established, significant modes of HIV transmission. There is clear

biological and epidemiological evidence that these are the main ways in which HIV is passed on.

"Not every act of unprotected sex with an HIV-positive person results in HIV transmission."

The two main sexual activities are:

- Unprotected vaginal intercourse with an HIV-positive person. HIV can be passed on to either a male or female partner, although the risk is greater for a female partner.
- Unprotected anal intercourse with an HIV-positive person. HIV can be passed on to either an insertive partner ('top') or a receptive partner ('bottom'), but the risk is greater for a receptive partner.

Across the world, significant numbers of HIV transmissions also occur through:

- Sharing unsterilised injecting equipment which has been previously used by someone who is HIV-positive.
- During pregnancy, childbirth or breastfeeding, from an HIV-positive mother who is not taking HIV treatment to her baby.
- Receiving donated blood, organs, or injections with unsterilised needles in countries with inadequate screening and infection control procedures.

Lowering the risk of sexual transmission

There are several protective measures which dramatically reduce the risk of HIV transmission during sex. You can find out more about these in other factsheets.

When people with HIV take effective treatment, the amount of HIV in their body fluids falls drastically, to the point where it is highly unlikely they would pass HIV on to someone else.

An extremely low level of HIV in body fluids is referred to as an 'undetectable viral load'.

If the HIV-negative person takes antiretroviral medications as pre-exposure prophylaxis (PrEP), this significantly reduces the risk of acquiring HIV.

If male condoms or female condoms are used, this significantly reduces the risk of acquiring HIV.

If a man is circumcised, this partially lowers his risk of acquiring HIV during sex with an HIV-

positive woman.

Factors that increase the risk of sexual transmission

Not every act of unprotected sex with an HIV-positive person results in HIV transmission. (In fact, the average risk is around 1 in 1000, except for receptive anal sex when the risk is around 14 in 1000.) But other factors can make HIV transmission more likely.

If the HIV-negative person has an untreated sexually transmitted infection (such as chlamydia or gonorrhoea), the risk is greater.

Just as HIV treatment and a low viral load makes HIV transmission less likely, a *high* viral load makes it more likely. 'Viral load' refers to the quantity of HIV in a person's body fluids. It is extremely high in the first few weeks after a person is first infected with HIV. It may also be high if a person does not take HIV treatment and has advanced disease. People who have HIV without realising it cannot take HIV treatment, so there is a strong possibility that they have a high viral load. (Around one in five people living with HIV in the UK has not tested recently and is unaware of their infection.)

HIV transmission through other sexual activities

HIV is also sometimes transmitted during [oral sex \(fellatio\)](#). It may occasionally be passed from an HIV-positive man to a person sucking his penis. (Other forms of oral sex [are considered to be either low-risk or no-risk](#).)

Oral sex is much less risky than vaginal or anal sex, but it is not risk free. The risk depends on the viral load of the person with HIV, the dental health of the person performing oral sex and untreated sexually transmitted infections.

HIV can be transmitted by sharing sex toys such as dildos or butt plugs. They should be covered with condoms or disinfected between use by different people.

Impossible routes of HIV transmission

HIV transmission through the following activities is biologically implausible and there have been no documented cases.

There is no risk of HIV being passed on through: coughing, sneezing or spitting; kissing, hugging or shaking hands; sharing cutlery, plates or cups; breathing the same air; using the same lavatory; mosquito or animal bites.

Find out more

HIV & sex Information booklet

Transmission facts Basic leaflet with pictures

Viral load and transmission – a factsheet for HIV-negative people Simple factsheet