



Positive Prevention: What New HIV Prevention Technologies Mean for People Living with HIV

**Guiding
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**What New HIV
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Resources

Treatment-as-prevention

Treatment-as-prevention is a term used to describe the use of antiretroviral drugs (ARVs) to reduce the risk of passing HIV on to others. This strategy functions as a secondary benefit of antiretroviral treatment after its primary purpose of improving an HIV-positive individual's health.

Treatment for people who are HIV-positive could have prevention benefits in two ways. First, it has been proven to work at the individual level. One clinical trial demonstrated a 96% reduction in risk of HIV transmission in serodiscordant couples, when the HIV-positive partner was taking ARVs. Almost all the couples in the trial were heterosexual couples.

Second, it may work at the population or community level. For example, in San Francisco, decreases in community viral load have been associated with lower numbers of new HIV infections.

Around the world and in Canada there are demonstration projects, pilot studies and revised public health guidance that are seeking to demonstrate and capitalize on the prevention benefits of treatment.

In some cases, the treatment-as-prevention approach proposes starting HIV-positive people on ARVs when they are diagnosed—which may or may not be when it is clinically indicated to do so. There have been ongoing discussions at the local, country, regional and global levels about these various approaches. Treatment activists, prevention advocates and networks of people living with HIV have expressed support for increased access to testing and treatment to the extent that it remains rights-based and voluntary, that it links testing to treatment, care, support and prevention, that it addresses the numerous barriers to access that still exist, and that it recognises that individuals may still decide to delay treatment for clinical, economic, social or personal reasons.

Microbicides

Microbicides are substances that could be applied vaginally or rectally to prevent the sexual transmission of HIV. A microbicide might reduce an HIV-positive person's risk of infection with other strains of HIV. Some products may also reduce the risk of getting other sexually transmitted infections or yeast infections (also called vaginal thrush). It is also possible that a microbicide that is not contracep-

tive could help an HIV-positive woman conceive a baby with little risk of endangering her HIV-negative partner.

Most microbicide candidates now in development are based on ARVs. ARV-based microbicides will not be appropriate for use by someone who is HIV-positive because of the risk of developing drug resistance. Therefore, non-ARV-based microbicides should be pursued to ensure a safe new prevention alternative for people living with HIV.

Pre-exposure prophylaxis (PrEP)

Pre-exposure prophylaxis is the ongoing use of ARVs, starting before an exposure and continuing afterwards. It is used by HIV-negative people to reduce their risk of becoming infected.

HIV testing needs to be a condition for access to PrEP because only people who know that they are HIV-negative can use PrEP safely. If you use it when you are already HIV-positive, you are very likely to develop drug-resistant virus. Having drug-resistant virus may make it harder to treat your HIV infection, and you may then pass on the drug-resistant virus to other people.

Vaccines

A vaccine is a substance that teaches the body to recognise and defend itself against bacteria and viruses that cause disease.

While preventive vaccines are designed to be given to HIV-negative people, it is thought that they might have a therapeutic effect if that vaccinated person eventually becomes HIV-positive. Since vaccines would only reduce the risk of infection—not eliminate it—someone who has been vaccinated could still become HIV-positive. It is hoped that the vaccine they received while HIV-negative could help them once they become HIV-positive by maintaining a lower viral load and a better functioning immune system than if they had not been vaccinated. The preventive vaccine taken while they were HIV-negative could therefore have a therapeutic effect once they became HIV-positive.

Therapeutic vaccines are also being tested, and are designed to boost the body's immune response to HIV in order to better control the infection among

people who are already HIV-positive.

Male and female condoms

Used consistently and correctly, both male and female condoms significantly reduce the risk of HIV, sexually transmitted infections (STIs), and pregnancy by providing a barrier to prevent the exchange of bodily fluids.

However, because they work as a physical barrier, they are often seen as a barrier to trust and intimacy, and they prevent conception. For many people in relationships in Canada and around the world, that is a serious limitation.

Condoms also require the active consent and cooperation of the insertive partner. While the receptive partner—whether female or male—can often suggest, negotiate or insist on condom use, it is ultimately up to the insertive partner to decide whether or not they will use a male condom. And in many situations, the receptive partners—particularly women—are not always able to negotiate condom use. Also, many people are unable or unwilling to use condoms; they do not like to use them, they may not find them pleasurable, they may have difficulties maintaining an erection, they may be allergic to latex, they may be tired of condom messaging and want alternatives to reducing risk, and they may see them as a barrier to intimacy.

Condoms are still cheap, effective, and the best option for many people. But developing new HIV prevention tools that would allow conception while still reducing the risk of HIV infection, that would be more within the control of the receptive partner, and that would enhance sexual pleasure without forming a physical barrier, would provide critical new options that are largely missing from current interventions.

Medical male circumcision

Safe, sterile male circumcision performed by a trained professional can reduce HIV-negative men's risk of acquiring HIV through vaginal sex by approximately 60-70%.

There are no conclusive data on the direct impact of circumcision on transmission from HIV-positive

men to HIV-negative female partners.

There is no randomised clinical trial data on the impact of male circumcision on HIV transmission rates through anal intercourse—for either men or women.

Post-exposure prophylaxis (PEP)

PEP can be prescribed for occupational exposures (for example, needle stick injuries in hospitals) or non-occupational exposures (for example, high-risk sexual activity).

PEP is an intervention in which people who have already been potentially exposed to HIV take a brief course (usually 28 days) of antiretroviral (ARV) medication as soon as possible after an exposure, and certainly beginning within 72 hours after exposure.

Access to non-occupational PEP varies greatly across the country.

Prevention of vertical transmission

To prevent vertical transmission (transmitting HIV to the child of an HIV-positive mother) it is most important to provide ARVs to the mother during her pregnancy and labour, and to provide ARVs to the infant during the first few weeks after birth. When possible, delivery by Caesarian section and avoiding breastfeeding can also significantly reduce transmission risk. If avoiding breastfeeding is not possible, exclusively breastfeeding the baby is less risky than alternating between breastfeeding and using formula.

Ideally, we should scale up prevention programmes to ensure that fewer women become HIV-positive. If they are HIV-positive and it is clinically indicated, women should have ongoing access to treatment, not just during pregnancy and birth.