Pre-exposure prophylaxis (PrEP)

Key Points

- The consistent and correct use of oral pre-exposure prophylaxis (PrEP) is a highly effective strategy to help prevent HIV transmission for people at high risk for HIV.
- PrEP involves the use of antiretroviral drugs starting before and continuing after an HIV exposure, throughout periods of high risk.
- When PrEP is used consistently and correctly, it is rare to get HIV through sex, and the chance of getting HIV from sharing equipment used to inject drugs is greatly reduced.

Oral PrEP involves the use of antiretroviral drugs by an HIV-negative person to reduce their risk of getting HIV. It is taken in pill form, starting before and continuing after an HIV exposure. Oral PrEP contains two antiretroviral drugs that are also used for HIV treatment: tenofovir (also called TDF) and emtricitabine (also called FTC).

When oral PrEP is taken consistently and correctly, the antiretroviral drugs get into the bloodstream and genital and rectal tissues. This helps prevent HIV from infecting and replicating within the body's immune cells, but drug levels must remain high. If pills are not taken consistently as prescribed, there may not be enough medication in the body to prevent HIV infection.

For oral PrEP to reduce the risk of transmission, it must be used consistently and correctly. This includes:

- high adherence to PrEP medications as prescribed;
- initial HIV testing to ensure a person is HIV negative before starting PrEP, and regular testing while taking PrEP to check they remain HIV negative;
- having kidney function tested, and getting screened for hepatitis A, B and C before starting PrEP; and
- regular visits with a healthcare provider after the first month on PrEP and approximately every three months thereafter to be tested for HIV and sexually transmitted infections (STIs), monitored for drug side effects and toxicity in the body, and to receive adherence and risk-reduction counselling.

Oral PrEP should only be used by people who are HIV negative. This is because a person can develop resistance to the drugs in PrEP if they start PrEP when they are HIV positive (and unaware of their positive status). The risk of developing drug resistance is lower in people who start PrEP when they are HIV negative and later become HIV positive while on PrEP.

Although oral PrEP is generally safe and well tolerated, it may cause side effects in some people. Some of the possible side effects include nausea, vomiting, diarrhea, headache and dizziness. These side effects are usually mild and temporary. PrEP may also affect kidney, liver and bone health, but evidence suggests the changes are reversible after stopping PrEP. The long-term effects of using oral PrEP are less well known.

Evidence shows that the consistent and correct use of oral PrEP is a highly effective strategy to reduce the risk of HIV transmission when taken daily by:

- gay, bisexual and other men who have sex with men (gbMSM)
- heterosexual men and women
- people who inject drugs

In addition, some studies have found that an intermittent PrEP strategy, taken on-demand before and after sex, is a highly effective strategy to reduce the risk of sexual HIV transmission among gbMSM. This strategy involves taking two pills two to 24 hours before first sexual activity, followed by one pill taken daily until 48 hours after the last sexual activity. No studies have evaluated the effectiveness of intermittent PrEP in other populations and it is not recommended for people who have vaginal sex or people who inject drugs.
Research shows that adherence (taking medications as prescribed) is crucial for oral PrEP to work. In all trials, higher adherence was associated with greater protection. Ongoing studies in real-world settings continue to show that when oral PrEP is used consistently and correctly it is rare for HIV to be transmitted.

While oral PrEP is as effective for women as it is for men when used consistently and correctly, daily adherence may be more important for women than for men. There is some evidence showing that PrEP takes longer to reach maximum drug levels in vaginal tissues compared to rectal tissues, and that drug levels are lower in vaginal tissues. This suggests that daily dosing of oral PrEP may be more important for women having vaginal sex to maintain sufficient drug levels to help prevent HIV infection.

Though it is rare for HIV to be transmitted when PrEP is used consistent and correctly, there are several well-documented cases of PrEP failure in people who were adherent to PrEP. In most of these cases, the person taking PrEP acquired a rare strain of HIV that was resistant to the drugs in PrEP.

**Resources**

- CATIE statement on the use of oral pre-exposure prophylaxis (PrEP) as a highly effective strategy to prevent the sexual transmission of HIV
- Oral pre-exposure prophylaxis (PrEP) – CATIE fact sheet
- PrEP for understudied populations: Exploring questions about efficacy and safety – Prevention in Focus
- 8 Questions about PrEP for Guys – CATIE
- Canadian guideline on HIV pre-exposure prophylaxis and nonoccupational postexposure prophylaxis
- La prophylaxie préexposition au virus de l'immunodéficience humaine : Guide pour les professionnels de la santé du Québec – Ministère de la Santé et des Services sociaux du Québec (French only)
- Guidance for the use of Pre-Exposure Prophylaxis (PrEP) for the prevention of HIV acquisition in British Columbia – BC Centre for Excellence in HIV/AIDS
- Pre-exposure prophylaxis (PrEP) resources

**Sources**


Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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