

Drugs used to treat HIV also reduce risk of HIV infection

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People at high risk of HIV infection can reduce their risk of acquiring the disease by taking antiretroviral drugs, according to Cochrane researchers. In an update of a systematic review first published in 2009, the researchers found that uninfected people in relationships with HIV-infected partners, men who have sex with men and those in other high risk groups are at a lower risk of becoming infected with the virus if they regularly take drugs that are normally prescribed to treat people with HIV.

Antiretroviral therapy (ART) is the standard drug treatment for HIV in patients whose disease has progressed to a certain level. Antiretroviral drugs are also beginning to be used as prophylactics in people at high risk of acquiring the disease from sexual partners. The use of antiretroviral drugs in preventing as opposed to treating [HIV infection](#) is referred to as pre-exposure prophylaxis (PrEP). PrEP is often considered controversial, not only because uninfected people may develop resistance to the drugs and experience serious side effects such as kidney toxicity and [bone density loss](#), but also because the idea that PrEP offers protection may encourage people to indulge in riskier [sexual behaviour](#), thereby increasing their overall risk of HIV infection. It is therefore important to establish whether PrEP really works and what level of protection it affords.

The researchers analysed data from six trials that tested the protective effect of daily doses of the oral antiretroviral drug [tenofovir](#) disoproxil fumarate (TDF) with or without [emtricitabine](#) (FTC), compared to a

placebo or intermittent use. In total, the trials involved 9,849 people, including men who have sex with men, partners of HIV-infected people, [sex workers](#) and people who have multiple [sexual partners](#). Data from four of the trials and a total of 8,813 people showed that giving TDF plus FTC reduces the risk of HIV infection by around half, from 37 in 1,000 to 19 in 1,000. Data from two trials and a total of 4,027 people showed that TDF alone reduces the risk of HIV infection by nearly two thirds, from 26 in 1,000 to 10 in 1,000.

"Our findings suggest that antiretroviral drugs can reduce the risk of HIV infection for people in high risk groups," said lead researcher, Charles Okwundu of the Centre for Evidence-Based Health Care at Stellenbosch University in Tygerberg, South Africa. "However, in the search for highly reliable HIV prevention strategies, it is important to determine how pre-exposure prophylaxis can best be combined with existing programmes, as no strategy is likely to be 100 per cent effective."

Those taking [antiretroviral drugs](#) did not suffer more adverse effects in the trials, and sexual risk behaviour was similar in both the intervention and control groups. But the researchers say further research is required to ensure that PrEP, which is still a new approach, is safe and cost-effective. "There are still many questions that need to be answered," said Okwundu. "For example, how do we ensure that people adhere to their ART regimens? What are the long-term effects? Is pre-exposure prophylaxis cost-effective in the long run?"

More information: Okwundu CI, Uthman OA, Okoromah CAN. Antiretroviral pre-exposure prophylaxis (PrEP) for preventing HIV in high-risk individuals. *Cochrane Database of Systematic Reviews* 2012, Issue 7. Art. No.: CD007189. [DOI: 10.1002/14651858.CD007189.pub3](https://doi.org/10.1002/14651858.CD007189.pub3)

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