



Breakthrough of the Year: Twice-Yearly PrEP

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Twice-yearly lenacapavir pre-exposure prophylaxis (PrEP) is the 2024 breakthrough of the year, according to Science magazine. Lenacapavir for PrEP isn't approved yet, but studies showed that the HIV capsid inhibitor dramatically reduces the risk of acquiring the virus. Lenacapavir is an antiretroviral drug—not a vaccine that trains the immune system to fight HIV—but vaccine candidates have repeatedly failed, so long-acting PrEP is the next best thing.

"Science acknowledges the next, but by no means final, step in the drive to fight AIDS, where the rigors of the laboratory and the needs of humanity are inseparable," wrote Holden Thorp, PhD, the journal's editor-in-chief.

The PURPOSE 1 trial showed that twice-yearly lenacapavir PrEP was 100% effective for young cisgender women in Africa. None of the women who received the injections every six months acquired HIV. Similarly, PURPOSE 2 showed that twice-yearly lenacapavir reduced HIV risk by 96% compared with background incidence for gay and bisexual men and gender-diverse people in the United States and six other countries.

Oral PrEP was first approved in 2012, but it has still not reached its full potential. Some people have trouble remembering to take a pill every day, while others may feel stigma around using antiretrovirals or are hesitant to have pill bottles that could be lost or stolen. While a twice-yearly prevention shot would be a game changer, Gilead Sciences recently revealed that it is working on new lenacapavir formulations that could potentially be administered just once a year. However, researchers, advocates and global health officials stress that the promise of long-acting PrEP can be realized only if it is accessible to everyone who needs it worldwide.