

## HIV drugs sharply cut risk of transmission, study finds

By David Brown, Published: May 12

AIDS researchers announced Thursday that a study conducted in nine countries has proved the long-standing hunch that HIV-infected people on treatment are much less likely to transmit the virus than people who aren't taking the drugs.

The [study](#), which was stopped early because the results were so dramatic, found that men and women whose sexual partners were infected with the AIDS virus were almost completely protected if the partner took a combination of HIV-suppressing drugs.

The study provides evidence — useful in American cities and African villages — that getting HIV-infected people on treatment early, long before they have symptoms, may be the best strategy for slowing the 30-year-old epidemic. The District has the highest infection rate of any American city, on a par with that of Rwanda.

“This is far beyond expectation. It could completely change the way we are dealing with the epidemic,” said Michel Sidibe, head of UNAIDS, the United Nations’ AIDS program.

“This is data that you can’t ignore,” said Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases, which paid for the \$78 million experiment.

Condoms, behavior change, clean hypodermic needles and a safe blood supply are the chief tools for preventing HIV infection. However, since the arrival of antiretroviral therapy (ART) in 1996, there has been a lot of indirect evidence that treatment is a tool for prevention.

The reason is simple. ART, three or more drugs taken every day, prevents the AIDS virus from replicating, and it rapidly disappears from blood and other bodily fluids that are the usual vehicles for infection.

The idea that treatment could be preventive was seen in studies of “discordant” couples — one partner infected, the other not — in Kenya. Researchers observed that when an infected person was in treatment, the partner was at much less risk of becoming infected. This observation held for whole populations.

Researchers in British Columbia last year reported that the rate of new infection for the entire province declined after a policy of widespread HIV testing and early treatment was adopted.

What was missing was evidence from a randomized, controlled trial — the gold standard of medical research — that treatment had a clearly preventive effect.



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The new study enrolled 1,763 couples in five African countries, as well as Brazil, India, Thailand and the United States. Nearly all were heterosexual. The researchers wanted to include large numbers of gay men but were unsuccessful in recruiting them, possibly because they were already convinced that treatment reduces transmission.

All of the volunteers had a CD4 cell count of 350 to 550 cells per cubic millimeter of blood — evidence of mild damage to the immune system.

In half of the couples, the infected person immediately went on ART. In the other half, the medicines weren't started until the infection became more severe, as evidenced by a fall of the CD4 count below 250. All were advised to use condoms.

Over the next four years, 28 people acquired HIV from their partner. (Gene fingerprinting of the virus revealed that in 11 other cases, people became infected by someone other than their regular partner.) Of those 28 new infections, 27 occurred among couples in which the HIV-infected partner had not started taking antiretroviral drugs at the start of the study. That amounted to a 96 percent reduction in the risk of acquiring HIV in the couples in which the infected partner was on ART.

Significantly, 17 of the 27 infections occurred in couples in which the infected partner's CD4 count was greater than 350. The World Health Organization's guidelines call for starting ART when the count dips below 350. This study shows that having a partner whose CD4 count is above that cutoff is no assurance the person won't transmit the virus.

The leader of the study, Myron Cohen of the University of North Carolina at Chapel Hill, said the results are "probably generalizable" to all heterosexuals. But that's not absolutely certain.

The study marks a further swing of the pendulum back toward the once-popular and later discredited HIV treatment strategy known as "hit hard, hit early."

Prescribing ART long before an infected person has symptoms or evidence of severe immune system damage was popular until it became clear the drugs could have serious side effects. (They can damage nerves, raise blood cholesterol and change the distribution of body fat). More recent evidence shows that putting off treatment for too long increases the risk of early death.

Although it is now clear that ART protects a person's partner, what isn't certain is whether ART benefits the patient when it's started soon after infection and before the immune system is measurably damaged. A study designed to answer that question recently started but won't be finished for several years.

Some AIDS experts fear the new study may be used to browbeat newly infected people into starting ART earlier than they might otherwise.

"I can imagine people deciding to get treatment because they are in a relationship and they want to protect the partner. But if a person has a CD4 count of 800, it is wrong to mislead people that they will benefit when we really don't know," said Joseph A. Sonnabend, 78, a retired physician and researcher previously affiliated with St. Luke's-Roosevelt Hospital Center in New York City.

Like many cities with a high AIDS prevalence, the District has an aggressive policy of testing for HIV infection and urging infected people to enter care.

As of Dec. 31, 2008, the most recent year for which data are available, 16,513 city residents were living with HIV. About 3.2 percent of people older than 12 in the city are thought to be infected.

Staff writer Lena H. Sun contributed to this report.

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