

New contraceptive device is designed to prevent sexual transmission of HIV

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Researchers from Weill Cornell Medical College have published results showing that a new contraceptive device may also effectively block the transmission of the HIV virus. Findings show that the device prevents infection by the HIV virus in laboratory testing. The promising results are published in the most recent issue of the journal *AIDS*.

The new device is a vaginal ring that releases multiple types of non-hormonal agents and microbicides, which would prevent conception as well as sexually transmitted HIV infection.

Worldwide, there are about 5 million new infections and 3 million deaths per year due to HIV/AIDS. If proven successful in future clinical trials, the new device could empower women to effectively and conveniently protect themselves from unintended pregnancy and sexually transmitted infection. The ring may also someday represent a novel method to prevent STIs for those with aversion to currently available methods, with hormonally derived active agents, or with allergies to latex condoms.

"This device is a new approach to birth control, because it avoids the long-term use of hormonal methods that have been associated with increased risk of certain cancers," says Dr. Brij Saxena, lead author and the Harold and Percy Uris Professor of [Reproductive Biology](#) and professor of endocrinology in the Department of Obstetrics and Gynecology at Weill Cornell Medical College. "At the same time, this is the first device to simultaneously offer the possibility to prevent

unintended pregnancy and HIV transmission."

"No one has ever conquered a viral epidemic with treatment, so prevention is the most effective option. Ideally, an [HIV vaccine](#) is the most desirable method, but that is not foreseeable in the near future," explains Dr. Jeffrey Laurence, co-author of the study and attending physician at NewYork-Presbyterian Hospital/Weill Cornell Medical Center. "The next best thing would be something that would prevent infection and put the power in the susceptible female partner's control. That's the potential a device such as this can offer."

The vaginally inserted ring is incorporated with multiple antiviral drugs that prevent HIV infection and are time-released over a period up to 28 days. The compounds tested were a newly developed anti-HIV agent, Boc-lysinated betulonic acid, TMC120 (dapivirine), PMPA, and 3'-azido-3'-deoxythymidine (AZT or zidovudine), which, when combined, were found to block infection in human cells exposed to the virus in a laboratory setting.

"The combination of these antiviral drugs has proven to be potent agents that may block infection by the [HIV virus](#)," says Dr. Saxena.

The ring is also incorporated with compounds that prevent conception by arresting sperm motility, raising vaginal mucous viscosity, and sustaining the acidity of the vagina in which sperm do not survive. Traditionally, similar devices have used hormonal compounds that have been linked to increased risk of breast and cervical cancers, or spermicidal compounds that kill sperm, but may lead to irritation and inflammation. Past findings published in the journal *Contraception* found the device to be highly effective in animal models and in laboratory testing.

"The compounds in the device are natural materials that are already approved by the U.S. Food and Drug Administration for use in humans,"

explains Dr. Saxena.

Source: New York- Presbyterian Hospital/Weill Cornell Medical Center/Weill Cornell Medical College

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