

Novel intravaginal ring shows promise in HIV prevention

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A new 90-day intravaginal ring has been developed—that for the first time—enables the long-lasting vaginal delivery of tenofovir (TFV), the only topical prophylactic shown to be effective at reducing the sexual transmission of human immunodeficiency virus (HIV) when formulated in a short-lasting gel. This research is being presented at the 2012 American Association of Pharmaceutical Scientists (AAPS) Annual Meeting and Exposition in Chicago, Ill., Oct. 14 – 18.

Lead researcher Patrick Kiser and colleagues from the University of Utah, in collaboration with CONRAD, a leading reproductive health research organization, created a novel reservoir ring composed in part of plastic tubing that absorbs water when placed in the body. Conventional ring technology, developed in the 1970s, is inadequate in delivering water-soluble drugs such as TFV. This new design allows for large quantities of TFV to be delivered for up to 90 days, at doses expected to prevent [HIV infection](#).

"We anticipate that this next-generation ring will be able to release a spectrum of drugs that currently cannot be delivered due to limitations of standard technology," said Kiser, who led development of the ring at the University of Utah. "This ring is a breakthrough design because it is highly adaptable to almost any drug; the amount of drug delivered each day is the same and the release rate can be modified easily if needed."

Kiser's research group shows that the vaginal concentration of TFV in sheep using the new ring is similar to or exceeds that of a short-lasting

TFV [vaginal gel](#) that was proven to be clinically effective at reducing the risk of [HIV acquisition](#) in women. This ring can also be readily modified to deliver an anti-HIV agent and a contraceptive at the same time, making it a multi-purpose prevention technology. Work is in progress to do just that, as the group has recently developed a ring to co-deliver TFV and the hormonal contraceptive levonorgestrel (LNG).

Provided by American Association of Pharmaceutical Scientists

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