

# All About Rectal Microbicides



## Who needs rectal microbicides?

Both heterosexuals and homosexuals practice anal intercourse for pleasure. Heterosexuals also may consider intercourse without risk of pregnancy an incentive. In U.S. surveys, over one fifth of heterosexual women report having had anal intercourse and 6.7% of heterosexual couples practice anal intercourse at least once a month.<sup>1</sup> Among a cohort of US women recruited because of other HIV-related risk, 32% reported having had anal sex in the past six months. The few international studies available show that anal intercourse is also practiced in various populations all over the world.<sup>2</sup>

HIV is significantly more easily transmitted to a receptive partner (male or female) during anal sex than during vaginal sex. Condoms provide an effective barrier against infection with HIV and some other sexually transmitted infections, such as gonorrhoea, which may facilitate HIV transmission. But millions of receptive sex partners find it very difficult or impossible to ensure that condoms are used every time.

Rectal microbicides could offer both primary protection in the absence of condoms and back-up protection if the condom breaks or slips off. For those wanting to avoid condom use, rectal microbicides could be an important alternative means of protection, especially if they were unobtrusive and/or enhanced sexual pleasure enough to motivate consistent use. Such alternatives are essential if we are to address the full spectrum of prevalent sexual practices and the basic human need for accessible, user-controlled HIV and STD prevention tools.

## What's the difference between vaginal and rectal microbicides?

Over 2 dozen potential microbicides are being investigated for possible vaginal use but it is not clear yet whether any of them will be suitable for rectal use. The rectum and the vagina have very different structures and natural ecologies. The vagina, for example, is a closed pouch while the rectum is part of an open-ended cavity. A greater quantity of the microbicial product is likely to be required for adequate rectal coverage than for effective vaginal use.

More immune cells with CD4 receptors and more CD4 receptors per cell make rectal mucosa particularly vulnerable to HIV infection. The rectal lining is more fragile than most of the tissue lining the vagina. These factors further enhance rectal vulnerability to irritation, tearing and infection during sex.

## What is going on with rectal microbicide research?

Although most microbicide research focuses on vaginal use, some rectal studies are happening. These include both pre-clinical (lab-based) studies and clinical trials involving human participants. The pre-clinical research addresses both safety and efficacy.

**In vitro testing is studying effects on rectal flora** of several candidate products now being tested for vaginal use. This helps scientists identify those that may damage the rectal eco-system and, therefore, should not be considered for further rectal research.

**Research to identify new products potentially appropriate for rectal use is also ongoing.** In 2003, for example, researchers at the University of Washington found that Cyanovirin-N (CV-N), an anti-viral protein derived from blue-green algae, prevented macaques from becoming infected after rectal

<sup>1</sup> Kelly, Brian. 2001. Letter to the Editor: On Encompassing Sexuality. *American Journal of Public Health* 91:11.

<sup>2</sup> Smith, Gary. 2001. Heterosexual and homosexual anal intercourse: an international perspective. *Venereology* 14:28-37

exposure to SIV or SHIV (a virus similar to HIV but able to infect and cause AIDS-like disease in monkeys). Work on this product is continuing. Some researchers are developing new technologies for delivering it effectively while others are working to determine the minimum dose needed to prevent HIV transmission.

Clinical trials are beginning to fill a huge gap in knowledge about how rectal sex affects the lining of the rectum. This information will help scientists identify products that could offer additional protection. It will also establish a baseline for evaluating whether a candidate product increases rectal vulnerability to HIV infection.

- **Phase 0 trials** are underway to measure the baseline levels of injury and inflammation that occur in the rectum during typical anal intercourse. In Phase 0 trials, no potential microbicides is used, just neutral lubricants. To do Phase I safety trials, researchers must be able to tell whether observed irritation or damage was most likely caused by the product being studied or is damage that could have occurred anyway, without the product. The Phase 0 data set a baseline against which to make that determination.
- **"Male Tolerance" trials** are studying whether potential microbicides cause irritation on the penis or within the male urethra. This information is vital to the successful introduction of both vaginal and rectal microbicides, since a product that increases risk of exposure or is irritating to the insertive partner would be unacceptable.

Other studies are combining clinical and behavioural approaches to begin to learn what kinds of products people might be willing and able to use. Researchers will be gathering information on user reactions to inserting varying amounts of neutral lubricants rectally (how much is "too much?") and on user preferences regarding use of suppositories versus gels.

## What do we know now?

We now know that Nonoxynol-9 IS NOT an effective rectal microbicide! Manufacturers started adding N-9 (a spermicide commonly used in over-the-counter birth control products) to condoms and sexual lubricants when it was shown to kill HIV in a test tube. Now we know conclusively that N-9 can irritate both rectal and vaginal tissues, possibly making it easier for HIV to reach and infect susceptible cells. In one study, lubricants containing N-9 were shown to strip surface cells off of the rectal lining, potentially enhancing its vulnerability to infection. **The World Health Organization and numerous other health authorities strongly advise against the rectal use of products containing N-9, including condoms coated with N-9 (often labeled "spermicidally lubricated").** For more information, see the Global Campaign Factsheet #9 on Nonoxynol 9

## What is the advocacy message?

**We need safe and effective rectal microbicides. The time to develop them is now!**

Homophobia and stigma have slowed down the progress of necessary research on the prevention of rectal infections. We can't continue to let this double stigmatization delay efforts to develop these urgently needed products. The escalating numbers of new HIV and STD infections resulting from unprotected anal intercourse testify to the fact that having one prevention tool, condoms, just isn't enough. It is time for receptive partners to have methods they can control. It's time for rectal microbicides.

The Global Campaign for Microbicides is a broad based, international coalition of organizations working to accelerate access to new HIV prevention options. Visit our website: [www.global-campaign.org](http://www.global-campaign.org) or contact us:

c/o PATH, 1800 K Street NW, Suite 800, Washington, DC 20006 USA  
Phone: +1 (202) 822-0033 Fax: +1 (202) 457-1466 Email: [info@global-campaign.org](mailto:info@global-campaign.org)

or

Rebekah Webb, 7<sup>th</sup> Floor, 98 rue du Trone, Brussels 1050, Belgium  
Phone: +32 (0)2 507 1221 Fax: +32 (0)2 507 1222 Email: [rwebb@global-campaign.org](mailto:rwebb@global-campaign.org)

