

Cervical Barrier Methods: a New Role for Old Devices?

by Teresa Harrison

A growing body of research suggests that covering the cervix may play a key role in preventing the transmission of HIV and other sexually transmitted infections (STIs). In a project now underway in Africa, members of the reproductive health community are evaluating cervical barriers such as diaphragms and cervical caps — which have long proven effective as safe, effective, woman-controlled contraceptives — for a dual role in protecting women against HIV and other STIs.

The current focus is on South Africa and Zimbabwe, where as many as 4,500 women at risk of contracting HIV are being asked to participate in the MIRA trial (Methods for Improving Reproductive Health in Africa). Researchers from the University of California — San Francisco, Ibis Reproductive Health, the University of Zimbabwe, the Medical Research Council of South Africa and the Perinatal HIV Research Unit of South Africa are studying the diaphragm's effectiveness in reducing transmission of HIV and other STIs, as well as its long-term acceptability, safety and feasibility of use with lubricant gels. Volunteers began enrolling in August of 2003, with results expected in about four years. More information about the trial is available at www.ibisreproductivehealth.org/projects/.

Several factors may make the cervix biologically more vulnerable to HIV/STIs than other areas of the reproductive system.¹ First, the cervix is covered with only one layer of delicate cells, which are damaged more easily than the cell lining of the vagina. Second, recent evidence suggests that the cervix has a concentration of cells with HIV receptors, increasing its vulnerability to HIV infection. Finally, the cervix is the entryway to the upper genital tract, so covering the cervix may also protect these areas from infection.

WOMAN-CONTROLLED, HORMONE-FREE

A diaphragm is a latex or silicone cup with a firm flexible rim and shallow dome that can be coated with spermicide and inserted into the vagina. A cervical cap is a small, firm latex cup designed to hold spermicide close to the cervix. Both devices cover the entrance to the cervix and protect the upper genital tract.

Cervical barriers offer several key benefits as contraceptive methods. Besides being safe and effective, they may be an excellent choice for women who cannot or choose not to use hormonal methods of contraception. In

The methods may offer significant health benefits where HIV rates are high and condom negotiation is difficult.

addition, both the diaphragm and cervical cap can be inserted up to six hours prior to sexual activity. Since a man's cooperation is not required to use cervical barriers, these methods give women more control over reproductive decision-making and potentially offer a covert method of protection against HIV and other STIs.

Despite these advantages, less than 3 percent of women in the U.S. using contraception use diaphragms or cervical caps, compared to 27 percent who use oral contraceptive pills.² Although research shows that some women who use the diaphragm find it to be an acceptable contraceptive method,³ women's misperceptions about and lack of knowledge about diaphragms, along with provider bias toward other methods, contribute to low usage rates.

There are additional obstacles to widespread acceptance of cervical barriers in developing countries, where HIV rates are particularly high, condom

negotiation is difficult — and the devices thus may offer significant health benefits. These include myths about the devices (such as, "it could get lost" inside the body) and provider bias leading to the assumption that only well-educated women can properly use them. If the MIRA trial yields positive results, researchers will use the findings to educate and inform the global public about cervical barriers and dual protection, while also focusing on such challenges as ensuring that supply is sufficient to meet demand and women can access them easily.

The development of vaginal microbicides (topical barriers that protect against a variety of STI pathogens) in the form of gels, creams, foams or film may provide another covert, woman-controlled method of dual protection. If used with a cervical barrier device, microbicides might enhance protection of the cervix. Although no microbicide has yet completed the clinical trial process, several are under development. The Alliance for Microbicide Development (www.microbicide.org) and the Global Campaign for Microbicides (www.global-campaign.org) provide more information on microbicides. ❀

Teresa Harrison, SM, is a project manager at Ibis Reproductive Health, Cambridge, Massachusetts.

She can be contacted at Tharrison@Ibisreproductivehealth.org. Ibis is a nonprofit organization that aims to improve women's reproductive health, choices and autonomy worldwide.

REFERENCES:

- ¹ Moench T, Chipato T, Padian N. "Preventing disease by protecting the cervix: the unexplored promise of internal vaginal barrier devices." *AIDS* 2001; 15(13): 1595-1602.
- ² Piccinino LJ, Mosher WD. "Trends in contraceptive use in the United States: 1982-1995." *Family Planning Perspectives* 1998; 30(1): 4-10 & 46.
- ³ Bulut A et al. "Assessing the acceptability of the diaphragm among low-income women in Columbia, Philippines and Turkey." *Contraception* 2001; 63(5): 267-275.