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**HEADLINE: Making whoopee over gel condom:**

*A birth-control gel that also protects against HIV and other venereal diseases is getting a yawn from industry. But a passionate grassroots movement is taking up the cause. Rebecca Reid reports.*

It sounds too good to be true -- a birth control method that protects not only against unwanted pregnancy, but also against a host of sexually transmitted diseases -- including HIV.

As if that weren't enough to make them the hottest commodity on the medical market, "microbicides" are discreet: They can't be seen or felt. And they put women in the driver's seat: The chemicals, which kill viruses, bacteria and fungi as well as sperm, come as insertable gels. This makes them preferable to condoms, which men often refuse to wear.

Incredibly, though, microbicides remain on the sidelines of medical research: There are only about 60 research projects worldwide on this new contraceptive, largely because researchers have had trouble finding backers. "This is a big problem with microbicide research," says Dr. Michel Bergeron, director of infectious disease research at Laval University, who says his team is about five years away from marketing the "Invisible Condom," which protects against HIV, herpes, chlamydia and gonorrhea as well as sperm. He says the main problem is that drug companies have shown little interest. "The pharmaceutical companies aren't interested in everything that is (related to) prevention. Companies don't see immediate payoffs," he explains.

By contrast, providing treatments for sexually transmitted disease is big business: AIDS drugs, including treatments for infections associated with the disease, can cost \$150,000 per patient over their lifetime. With 49,800 Canadians known to be infected, the total in this country alone comes to about \$7.5 billion. Jacques Lefebvre, spokesman for Rx & D, which represents brand-name drug companies in Canada, declined to comment on the issue, saying funding decisions are up to individual companies. Only one per cent of funding for microbicidal research comes from the private sector, says Dr. Bergeron. "It can be quite discouraging," he adds. Most AIDS and vaccine research are done by universities and non-profit foundations such as the Canadian Foundation of AIDS Research, which have far less money than the private sector: His own project has received a total budget of \$350,000 so far, all through the federal government. His team at Universite Laval in Quebec City is the only Canadian institution exploring microbicides.

Fear that microbicides will languish on the sidelines of medical research has sparked the beginnings of a worldwide grassroots movement to lobby for the revolutionary new contraceptive. In recent years, international advocacy groups such as the Alliance for Microbicide Development and the Global Campaign for Microbicides have sprung up, with the goal of pushing for more funds and increasing public awareness. "We need to mobilize nationally and locally to make pharmaceutical companies and the government more aware of microbicides," said Lilja Jonsdottir, national programs consultant for the Canadian AIDS Society and the co-ordinator for the Microbicide Advocacy Interest Network (MAG-NET), which was set up in 1999. Not only do researchers need more grants, but she wants Health Canada to start educating Canadians about microbicides, especially since they may be hitting the market in only five years.

Two years ago the group, which is affiliated with the Global Campaign for Microbicides based in Washington, D.C., produced a community mobilization kit in conjunction with the Canadian Aids Society and every three months they host a teleconference with microbicide activists and researchers to discuss breakthroughs and new strategy. Advocacy groups are particularly anxious to get the word out to women, for whom the incidence of HIV has risen dramatically in recent years. In 1985, women accounted for only 9.9 per cent of new cases in Canada; by 1999 that figure had risen to 25 per cent. Women now account for 14.1 per cent of all HIV-positive people in the country. "I think the prevention of HIV and STDs in women is a key issue because some men won't wear condoms and then (the women) are stuck with no alternative," says Dr. Bergeron, adding that STDs cost Canada about \$10 billion every year. Clinical trials of the Invisible Condom, which uses sodium lauryl sulfate, an ingredient commonly found in shampoos and toothpaste, found that neither women nor men could feel the gel during intercourse. The consistency of the Invisible Condom is very similar to vaginal secretions, and also works as a lubricant. There were no allergic reactions or toxicity, a problem that can occur with other spermicides. Dr. Bergeron will present the results of his trials at an international conference on microbicides in Belgium in May.

Microbicides are the first form of contraceptive to give women complete control over birth control and STD prevention, other than the female condom, which is expensive -- three for \$15 in Canada -- and has to be held in place during intercourse. Men have described the device as being like having sex with a plastic bag. The only other method that prevents both unwanted pregnancies and STDs is the male condom, which is only about 85-per-cent effective, and which a lot of men refuse to wear.

Zhaida Uddin, co-ordinator of the Women's Project for the AIDS committee of Ottawa, says microbicides would especially benefit women who are in abusive relationships, whose partners often cheat, exposing the women to the risk of STDs. However, she points out that microbicides don't necessarily eliminate the need for condoms altogether: While most protect against a range of common STDs, none has proven effective against all venereal diseases.

Microbicides could also be especially important in African countries, where HIV has reached epidemic proportions: In some countries, a third of the population is HIV-positive. Dr.

Bergeron is hoping to conduct the next stage of his clinical trials in Africa, with combined funding from Health Canada and CIDA.

Meanwhile, other scientists are working on different varieties of microbicides. A U.S. research team has developed another microbicide that, if successful, could also go a long way to alleviating the crisis in Africa: Carraguard, a product of a pharmaceutical company called Population Council, is designed to kill HIV without eradicating sperm, thus allowing a woman to conceive safely even if her husband is HIV-positive. Women are five times more likely to contract HIV from men than vice versa.

Found along the Atlantic coasts of the Canada, the U.S., Ireland and Europe, carrageenan comes from a kind of seaweed, and is used to thicken products such as ice cream and lotion. In clinical trials Carraguard has been shown to prevent infection by HIV, the human papilloma virus, and genital herpes. Dr. Janneke de Wijger, chief researcher in charge of Carraguard, said the product could be on the shelves within 10 years.

Epicyte Pharmaceutical Ltd., an American company based in San Diego, has developed a strain of corn that contains the human antibodies for the genital herpes virus. The corn kernels, or endosperm, as they're called, can simply be mashed up and turned into a topical lotion or gel.

Buffer Gel is another microbicide that has undergone clinical trials in the United States. It works by keeping the pH level of the vagina acidic, which kills sperm and pathogens. Dr. Kevin Whaley, research director of ReProtect, the Baltimore company researching Buffer Gel, said in preliminary trials Buffer Gel has been effective against herpes, HIV and the human papillomavirus (HPV).

HPV can cause genital warts and pelvic inflammatory disease, but there are usually no symptoms. "The consequences for women are terrible," says Dr. Bergeron. Untreated, the virus can make women infertile.