

'Molecular condom' to combat HIV

A "molecular condom" to protect women against HIV is being developed by US scientists.

The liquid formulated by a University of Utah team turns into a gel-like coating when inserted into the vagina.

Then, when exposed to semen, it returns to liquid form and releases an anti-viral drug to attack HIV.

However, the technology, featured in the Journal of Pharmaceutical Sciences, is still around five years away from being tested in humans.

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Dr Patrick Kiser
University of Utah

And the researchers predict it will be around 10 years before it might be in widespread use.

Researcher Dr Patrick Kiser said: "The ultimate hope for this technology is to protect women and their unborn or nursing children from the Aids virus."

The Utah project is part of a worldwide research effort to develop "microbicides" - drug-delivery systems such as gels, rings, sponges or creams to prevent infection by HIV and other sexually transmitted diseases.

They are seen as a way for women to gain power by protecting themselves from HIV, particularly in impoverished nations where Aids is widespread, where rape is rampant, or, where conventional condoms are taboo, not reliably available or where men resist using them.

Short-term effect

First-generation microbicides now being tested are expected to be available within four years and to be 50-60% effective.

However, Dr Kiser said they lasted only for a short time, meaning they had to be used shortly before sex.

The potential advantage of his technology is that it would be much longer lasting.

Microbicides could put the power of preventing HIV into women's hands

Yusef Azad
National Aids Trust

"We're shooting for a microbicide delivery system that would be used once a day or once a month," he said.

Tests have already shown that their 'hydrogel' is unlikely to cause significant side effects, or discomfort.

It is designed not to dehydrate vaginal cells, which can trigger infections, and not to be diluted by other fluids.

The next stage will be to see whether anti-viral drugs incorporated into the hydrogel can be released with the same efficiency as in the lab.

Indeed the researchers are hopeful that because the gel would be much thinner inside a woman than it was in the lab tests, the release of drugs should be even more effective.

High hopes

Yusef Azad, of the National Aids Trust, said: "Millions of women currently have little control over their sexual health and microbicides could put the power of preventing HIV into women's hands.

"It is vitally important that sufficient funding is channelled into the development of effective microbicides so that women have a range of options of products such as gels, liquids and creams that could provide a barrier to contracting HIV during sex."

Roger Pebody, treatment specialist for the HIV charity Terrence Higgins Trust said microbicides were one of the biggest hopes for preventing new HIV infections in the near future.

He said: "This is one of many projects that are in the early stages of development, however other microbicides could be as little as five years away."

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