Multipurpose Prevention Technologies (MPTs)

August 2013 update

THE NEED

Women need prevention strategies for many different needs – to protect them against HIV and other STIs; and at various times in their lives they may also want to prevent unwanted pregnancies. Today only the male and female condoms provide protection against HIV and also prevent pregnancies. These methods require partner negotiation and cooperation. Finding family planning methods and HIV prevention tools can be difficult. **Many** women have difficulties may not know knowing what is available or finding out about a range of options from trained providers. They may not be able to access or pay for methods. There are frequently challenges with partner consent. Women have long asked for methods that meet HIV prevention and family planning needs and are easy to use —and work is underway to develop these "multipurpose prevention technologies."

THE PRODUCTS

Multipurpose prevention technologies (MPTs)—most of which are still experimental—are designed to address two or more sexual and reproductive health indications simultaneously; for example, combining protection against unintended pregnancy and at least one sexually transmitted infection. Both male and female condoms prevent against HIV, other sexually transmitted infections and pregnancy and so are important examples of MPTs that already exists. However, additional choices that are not reliant on partner cooperation are needed for women to have more control of their reproductive and sexual health. MPTs are being developed in sustained-release forms as intravaginal rings (IVR), long-acting injectables, and as formulations such as gels, films and diaphragms carrying a drug for HIV and/or STI protection, that are used at or around the time of intercourse.

Right now, there are no existing MPTs, other than condoms. Many MPT products in the pipeline are still many years away from being evaluated in clinical trials—and eventually being licensed for use. But research in this area is substantial and growing. Many factors shape this work. These include questions what types of products women will want to use; what types of information regulatory authorities will need to approve such products; what the costs will be of developing and implementing such products—and the cost for all of this work. Additionally, the ongoing efficacy trials of the dapivirine ring and 1% tenofovir gel (see fact sheet, *Microbicides for HIV Prevention,* in this series) will shape MPT development.

Table 1 below shows the indication (prevention effect the product is designed to have—e.g. pregnancy or one or more STIs) the way it will be delivered (e.g. through vaginal gel, pill or injection), how it might work to provide preventive effect (for example, as a physical barrier to prevent fluid exchange or as a hormonal contraceptive) and what kind of dosage could be possible (e.g. daily pill or application, sustained through the blood or around sex).

TABLE 1 MPT Product Development: Many possibilities for MPT development

Indication	Delivery Mode	Mechanisms of Action	Dosage & Administration
BV	Film	Anti-microbial	Oral daily
Candida	Gel	Anti-fungal	Oral Peri-coital
Chlamydia	Implant	Anti-viral	Topical daily
Gonorrhea	Injection	Barrier	Topical Peri-coital
HIV	Oral pill	HC *	Topical Sustained
HPV	Non-IVR	Non-HC	Systemic sustained
HSV	Ring (IVR)	Probiotic	
Pregnancy	Tablet		
Syphilis			
Trichomonas			

Currently being tested in human clinical trials.

THE PIPELINE

Table 2 below shows which MPTs are further along in testing for both sustained-release and on-demand products. Women will have different needs and preferences throughout their lives. An array of different types of products is key to meeting these varying needs of different.

TABLE 2 MPT Products in the Pipeline: What is currently being tested

Products not requiring daily-use	Products used around the time of intercourse
90-day IVR (LNG and tenofovir) An intravaginal ring (IVR) that stays in for 90 days and releases levonorgestrel-releasing hormone (LNG) for contraception and tenofovir for HIV and HSV-2 prevention.	**SILCS diaphragm (non-HC gel and/or tenofovir gel)** 6-month typical use, "one size fits most," silicone diaphragm that does not need to be fitted by a clinician, intended for over-the-counter provision, used with tenofovir gel to prevent pregnancy and HIV.
30-day combination IVR (MZL) An intravaginal ring (IVR) that stays in for 30 days and releases a combination of MIV-150, Zinc Acetate and levonorgestrel-releasing hormone (LNG) in carrageenan gel to prevent HIV, HSV-2, HPV and pregnancy.	**Combination topical gel (MZL)** Topical vaginal gel combining MIV-150, Zinc Acetate and levonorgestrel-releasing hormone (LNG) in carrageenan gel to prevent HIV, HSV-2, HPV and pregnancy.
60-day IVR (Dapivirine and LNG) An intravaginal ring (IVR) that stays in for 60 days and releases a combination of dapivirine to prevent HIV and levonorgestrel-releasing hormone (LNG) to prevent pregnancy.	

*Hormonal contraception and HIV risk is an open issue that the field is currently considering. See www.avac.org/ht/d/sp/i/42152/pid/42152 for more information on the discussion of if and how hormonal contraceptive use affects women's risk of acquiring or transmitting HIV.

Acronyms

HC **H**ormonal **c**ontraception
IVR **I**ntra**v**aginal **r**ing
LNG **L**evo**n**or**g**estrel-releasing hormone (hormonal contraceptive)
MZL Combination of **M**IV-150, **Z**inc Acetate and **L**evonorgestrel-releasing hormone

Resources and links

AVAC www.avac.org
Coalition Advancing Multipurpose Innovations www.mpts101.org
CONRAD www.conrad.org
International Partnership for Microbicides www.ipm.org
Population Council www.popcouncil.org

About AVAC | AVAC is a non-profit organization that uses education, policy analysis, advocacy and a network of global collaborations to accelerate the ethical development and global delivery of new HIV prevention options as part of a comprehensive response to the pandemic. This fact sheet is part of the *Women's HIV Prevention* series, created to address HIV prevention strategies and the advocacy needed to bring them to reality.