

Frequently Asked Questions about Voluntary Medical Male Circumcision (VMMC)

What Is Voluntary Medical Male Circumcision?

Voluntary medical male circumcision (VMMC) is the surgical removal (cutting away) of the foreskin, which is the thin layer of skin that extends over the tip of the penis. VMMC may be offered to men who elect (wish) to undergo the procedure after they have been informed of the health benefits and risks associated with the procedure.

How Does Male Circumcision Protect Men against HIV Infection?

Men may be exposed to HIV when they have sex with someone who is infected. Specifically, men who have vaginal intercourse with HIV-infected women are exposed to HIV through the skin of their penis. Uncircumcised men who are exposed to HIV are more likely to become infected due to characteristics of the foreskin tissue. Removing the foreskin through VMMC reduces the likelihood of HIV infection. For men whose primary HIV exposure risk is through their penis, VMMC provides life-long partial protection against HIV infection.

Is VMMC Recommended for HIV-Infected Men?

VMMC protects men from acquiring (becoming infected with) HIV. If an uncircumcised man is already infected with HIV, becoming circumcised can no longer protect him from acquiring HIV. Furthermore, there is no scientific proof that a circumcised HIV-positive man is less likely to transmit HIV to others. Thus, for uncircumcised men who are HIV-positive, VMMC is not recommended for HIV prevention purposes.

All VMMC clients are strongly encouraged to get tested for HIV, and clients who test HIV-positive at VMMC sites are referred to care and treatment services. They are also encouraged to bring their partner for testing, in case the partner is unaware of their own status. Clients who test positive are informed that there is no HIV prevention benefit of VMMC for HIV-positive men and are given the opportunity to reconsider the procedure. If they still wish to be circumcised for reasons other than HIV prevention, and are healthy enough to undergo the procedure, they are counseled very strongly to abstain from sex while the wound is healing. All clients, regardless of HIV status, are counseled to abstain from sex during wound healing and to reduce their sexual risk behaviors indefinitely following VMMC. Clients also receive condoms and education about correct and consistent use of condoms.

Aren't HIV-Positive Men Who Undergo Circumcision at Increased Risk of Transmitting HIV to their Sex Partner(s)?

Following a VMMC procedure, the risk of HIV transmission from an HIV-positive man to an HIV-negative woman may be increased if they have sex before the surgical wound has healed.¹

¹ Gray RH et al. 2007. Male circumcision for HIV prevention in men in Rakai, Uganda: A randomised trial. *Lancet* 369(9562): 657-666.

Some couples have reported early resumption of sex after surgery.^{2,3} More counseling and education are needed to emphasize the importance of waiting to resume sex until after the wound is healed.

The World Health Organization (WHO) and UNAIDS recommend that men who have been circumcised wait at least six weeks before having sex to allow time for the wound to heal completely. In addition to receiving counseling about the importance of sexual abstinence during wound healing, all men who undergo circumcision should receive education and counseling about the importance of HIV testing, reducing their sexual risk behavior indefinitely after VMMC, and correct and consistent condom use.

Is VMMC Recommended for Men Who Have Sex with Men?

Findings from research studies are inconclusive. For men who have sex with men, circumcision may provide the insertive partner with some level of protection against acquiring HIV during anal sex, because the insertive partner's exposure risk is through the skin of the penis. The receptive partner in anal sex, however, is not protected from acquiring HIV, because the receptive partner's primary exposure to HIV is through the rectal tissue and not the tissue of the penis. Thus, for the receptive partner, removing the foreskin does not reduce his risk of acquiring HIV.

How Painful Is the VMMC Procedure?

The perception of pain varies by individual. Local anesthesia controls pain during the surgical procedure, but the anesthesia is injected through a needle, which itself causes some brief pain. Men often report minor discomfort in the first days following circumcision, and the discomfort is sufficiently managed with over-the-counter pain relievers.

Won't Women with a Newly Circumcised Male Partner Have Greater Difficulty Negotiating Condom Use?

Three research studies suggest that circumcision does not significantly change the way a condom is used.^{4,5,6} In fact, some men have suggested that putting on a condom is easier after circumcision.⁷ All VMMC clients are counseled that circumcision is only partially protective—not completely protective—and that they still need to take other measures to prevent HIV infection. Condom promotion is part of WHO's recommended minimum package of services that VMMC programs should provide, along with HIV testing and counseling, risk reduction counseling, screening and treatment for sexually transmitted infections, and the VMMC procedure.

Does Circumcision Make Sex Less Enjoyable for Men?

Only men who have had sex both with and without their foreskin can compare the sensation and sexual satisfaction they have felt before and after undergoing circumcision. Initial studies that evaluated sexual satisfaction among African men who had undergone VMMC indicated that VMMC does not have any effect on sexual desire or satisfaction, erectile function, or ability

² Herman-Roloff A, Bailey RC and Agot K. 2012. Factors associated with the early resumption of sexual activity following medical male circumcision in Nyanza province, Kenya. *AIDS Behavior* 16(5): 1173–1181.

³ Hewett PC et al. 2012. Sex with stitches: The resumption of sexual activity during the post-circumcision wound healing period in Zambia (abstract). *AIDS* 26(6): 749–756.

⁴ Gray et al., 2007.

⁵ Auvert BE et al. 2005. Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: The ANRS 1265 Trial. *PLoS Medicine* 2(11): e298.

⁶ Bailey RC et al. 2007. Male circumcision for HIV prevention in young men in Kisumu, Kenya: A randomised controlled trial. *Lancet* 369(9562): 643–656.

⁷ Krieger JN. 2008. Adult male circumcision: Effects on sexual function and sexual satisfaction in Kisumu, Kenya. *Journal of Sexual Medicine* 5(11): 2610–2622.

to achieve penetration; nor does it cause pain with intercourse.⁸ A study that compared men who had undergone VMMC to a control group showed that 98% of the men in both the intervention group and the uncircumcised control group rated their sexual satisfaction as “satisfied” or “very satisfied” six to 24 months after enrolling in the trial.⁹

Is PEPFAR’s Support of VMMC an Imposition of Western Culture and Policy on Africa?

Male circumcision is widely practiced in diverse cultures around the world, for a variety of reasons that encompass cultural norms, religious beliefs, appearance preferences, and health concerns. Male circumcision is traditionally practiced in Africa, and VMMC is an African solution to an African public health threat. An estimated two-thirds of African men are already circumcised for cultural or religious reasons. The non-circumcising communities in Southern Africa and parts of East Africa have the highest HIV prevalence.

PEPFAR (the U.S. President’s Emergency Plan for AIDS Relief) does not define HIV prevention strategies for countries in Africa; rather, PEPFAR supports African governments in their fight against the HIV/AIDS epidemic. Most ministries of health in Africa follow international guidance from WHO and UNAIDS, and that guidance recommends VMMC as an important HIV prevention intervention in countries with high HIV prevalence, low male circumcision prevalence, and a generalized (heterosexual) HIV epidemic.

All individuals have the right to know the proven benefits and potential risks of VMMC and to decide for themselves whether they wish to be circumcised (or have their newborn or adolescent son circumcised).

Are Men, Boys, and Infants Given a Choice about Undergoing VMMC?

Informed consent is a critical component of VMMC service delivery. All men (and/or the parents/guardians of minors) seeking VMMC services are counseled about the risks and benefits of VMMC, and they must provide their informed consent before the procedure is performed. VMMC for adolescents requires both the consent of the parent/guardian and the assent (agreement) of the adolescent himself.

The position that most ministries of health in the Eastern and Southern Africa region take is that parents have the right to give consent for circumcision on behalf of their infant sons, just as they have the right to consent to other preventive services such as immunization. This standard is in place for responsible, ethical infant care throughout the world and is supported by WHO and UNAIDS.

PEPFAR’s implementing partners adhere to a stringent policy of avoiding coercion or pressuring of males to receive VMMC services.

Does VMMC Benefit Women?

One of the primary benefits of VMMC is that it is also associated with a reduction in penile human papillomavirus (HPV).^{10,11} Women with circumcised male sex partners also have

⁸ Kigozi G et al. 2008. The effect of male circumcision on sexual satisfaction and function: Results from a randomized trial of male circumcision for human immunodeficiency virus prevention, Rakai, Uganda. *BJU International* 101(1): 65–70.

⁹ Krieger, 2008.

¹⁰ Hernandez BY et al. 2008. Circumcision and human papillomavirus infection in men: A site-specific comparison. *J Infect Dis* 197(6): 787–794.

reduced HPV and cervical cancer rates. As more men are circumcised, fewer men in the community will become infected with HIV, in turn decreasing the chances that a woman will encounter an HIV-positive partner. Mathematical models suggest that by 2025, VMMC may avert nearly as many new HIV infections annually in women as in men, due to this indirect protective effect.

VMMC provides a great opportunity to engage and educate men about HIV prevention and sexual and reproductive health issues, which may have benefits for their female partners. In virtually every African country, more women than men know their HIV status (partly because women are tested during pregnancy). VMMC presents a unique opportunity to encourage male interaction with the health system, test men for HIV, and get previously undiagnosed HIV-positive men linked to care and treatment services. Those care and treatment services can then reduce men's viral load and reduce their risk of transmitting HIV to their sex partners. Men seeking VMMC are educated about safer sex practices and their role in protecting their health and that of their partners.

Doesn't Scaling Up VMMC Services Waste Scarce Resources That Could Be Better Spent on Researching or Implementing Other Prevention Measures, Including Female-Initiated Prevention Strategies (Female Condoms and Microbicides)?

VMMC is not only cost-effective but cost saving. It is a brief, one-time medical procedure that provides a man with a lifetime of partial protection. Because repeated treatments are not necessary, services can be provided at a limited cost to health care systems. In some high-prevalence settings, if scale-up is rapid, every dollar spent on VMMC has the potential to save \$14 in care and treatment costs, according to mathematical models.^{12,13} By averting new HIV infections in men and women (as fewer men acquire HIV, fewer women will encounter HIV-positive partners), VMMC will save a substantial amount of money, which can then be used to accelerate progress in researching and implementing other prevention strategies.^{14,15}

There have been concerns that VMMC stresses scarce resources and adds to already overburdened health care systems. It is important to remember that although adult VMMC services do require short-term support from health care systems, they promise substantial long-term relief by sharply reducing the number of HIV-positive individuals needing care and treatment. The opportunity cost of not scaling up VMMC now will be the cost of providing care and treatment to an additional 3.4 million men and women in the future, individuals who likely would not have been infected had VMMC scale-up occurred.

Do Men Who are Circumcised Practice Riskier Sex Behaviors Because They Have a False Sense of Security?

This phenomenon is called *risk compensation*, and it is a valid concern with any partially protective intervention against HIV, including VMMC. The available data suggest that men do

¹¹ Castellsagué X et al. X et al. 2002. Male circumcision, penile human papillomavirus infection, and cervical cancer in female partners. *N Engl J Med* 346: 1105–1112.

¹² Njeuhmeli E et al. 2011. Voluntary medical male circumcision: Modeling the impact and cost of expanding male circumcision for HIV prevention in Eastern and Southern Africa. *PLoS Medicine* 8(11): e1001132.

¹³ Hankins CA, Njeuhmeli E and Forsythe S. 2011. Cost, impact, and challenges of scaling up voluntary medical male circumcision. *PLoS Med* 8(11): e1001127. doi:10.1371/journal.pmed.1001127

¹⁴ Njeuhmeli et al. 2011.

¹⁵ Hankins, Njeuhmeli, and Forsythe, 2011.

not change their behavior very much after circumcision. Risk-taking levels remain relatively fixed over time among circumcised and uncircumcised men, even among recently circumcised men.¹⁶

A study in Kenya found that men who underwent VMMC as part of a randomized controlled trial (RCT) did not increase their risk-taking behavior compared to their uncircumcised counterparts. There were no statistically significant differences in risk-taking behavior behaviors (or incidence of gonorrhea, chlamydia, or trichomoniasis) between circumcised and uncircumcised men, which further supported the self-reported evidence that risk compensation did not occur among men circumcised in the RCT.¹⁷

In slight contrast, a study in South Africa found that men enrolled in an RCT in the intervention group (circumcised men) reported an average of approximately one more sexual contact in the prior eight months compared to men in the control group (uncircumcised men).¹⁸ As more research and programs address the risk compensation issue, risk compensation among VMMC clients may be reduced. Follow-up studies are needed to evaluate this.

All VMMC clients receive extensive safer sex counseling and are advised that VMMC is only partially protective. In print media, circumcision is often described as the “goalkeeper” on a football field, analogous to the last line of defense against HIV, if other “defenders,” such as condom use and reducing the number of sexual partners, fail. Men are counseled to take additional steps to reduce their HIV risk, such as reducing their number of partners and using condoms correctly and consistently. In addition, all VMMC clients are provided with a supply of condoms.

Doesn't Medical Circumcision Ruin the Cultural Initiation Process for Populations That Practice Traditional Circumcision of Males?

Many tribal chiefs and custodians of traditional culture disagree with the view that VMMC ruins the cultural initiation process. Some elders have expressed the belief that for cultures to survive, they must evolve. Many elders understand that cutting the foreskin of all initiates with the same blade is not a safe practice, especially with the increased risk of transmitting HIV.¹⁹ The public health community respects tradition and is grateful for those custodians of tradition who recognize the capacity for science and culture to combine with a unified goal of protecting health, manhood, and tradition.

There are examples of communities where medical circumcision services have been successfully linked with traditional initiation ceremonies. In the Northwest Province of Zambia, for example, an all-male, all-circumcised team (traditional initiation practices generally require that the one performing the circumcision be a circumcised male) provided VMMC in a clinic close to the initiation school. Following circumcision, the initiates went to the traditional initiation school for the cultural portion of their initiation. The medical follow-up exams were conducted by health care providers at the camp. The linkage between medical circumcision and cultural practices ensures that the initiates have access to safe VMMC procedures and that cultural practices are respected.

¹⁶ Gray et al., 2007.

¹⁷ Bailey et al., 2007.

¹⁸ Auvert et al., 2005.

¹⁹ Malan M. 2012. The chief who lit a cultural fire in Zambia. *Mail & Guardian*, July 20. Accessed September 18, 2012, at: <http://mg.co.za/article/2012-07-19-the-chief-who-lit-a-cultural-fire-in-zambia>

Some Surveys Have Shown that HIV Prevalence Is Higher among Circumcised Men Than Uncircumcised Men in Some Populations. Why? Does This Mean That Circumcision Won't Protect Heterosexual Men in these Populations?

In populations in which men's HIV risk is primarily due to injection drug use (exposure to HIV is intravenous) or through receptive anal sex with other men (exposure to HIV is rectal), male circumcision is not expected to be protective because removing the foreskin does not change infection risks that are intravenous or rectal. However, in generalized (heterosexual) epidemics, male circumcision does biologically protect men from acquiring HIV from women through sex.

In countries with generalized HIV epidemics, there are infrequent cross-sectional surveys (surveys that enroll people to participate at only one point in time) that reveal high HIV prevalence in populations that practice male circumcision. These data may imply that male circumcision is not effectively protecting men against HIV in such areas. However, there are reasons why cross-sectional data do not discredit the scientific evidence that male circumcision partially protects men from acquiring HIV through heterosexual sex.

Before reviewing the reasons that cross-sectional data do not always align with the highly publicized results of the three male circumcision RCTs that took place in Uganda, Kenya, and South Africa, it is important to look at how hypotheses are scientifically tested. When researchers first suspect a cause-and-effect relationship between two things (in this case male circumcision and HIV), they look to see whether there are existing correlations that support their hypothesis. Scientists looked at levels of HIV and male circumcision across different populations and found a strong correlation: HIV prevalence was often higher in countries where male circumcision was uncommon (and lower in countries or areas where male circumcision was common).^{20,21,22} This is particularly true in Africa, although not for all countries/areas. If the association had been found across all populations worldwide, then further studies and clinical trials might not have been necessary to prove the cause-and-effect relationship.

There are a number of reasons, in addition to biological reasons, why HIV prevalence may be lower among some circumcised men. Some religions customarily circumcise males, while others do not, and there may be other differences among men in these religions that are associated with behaviors that put them at greater (or lesser) risk of HIV infection. For instance, if men from a specific religion are commonly circumcised, and they also engage in sexual behaviors that are less risky, then their lower HIV prevalence could be explained by their safer sexual behaviors rather than circumcision. Therefore, to further test the hypothesis that male circumcision provides biological protection against HIV acquisition, observational studies (the next higher level of scientific investigation) were performed. The observational studies followed HIV-negative men over time to see if they developed HIV infection. The infection rates among the circumcised men in the studies were then compared to the rates among the men who were not circumcised. Because men were being followed over time, they could also be asked about their sexual behaviors. In this way, the statistical analyses could control for any differences in sexual behaviors, and the level of protection against HIV resulting from circumcision could be separated from the level of protection resulting from differences in behaviors. The data from the observational studies also supported

²⁰ Bongaarts J et al. 1989. The relationship between male circumcision and HIV infection in African populations. *AIDS* 3: 373–377.

²¹ Moses S et al. 1990. Geographical patterns of male circumcision practices in Africa: Association with HIV seroprevalence. *Int J Epidemiol* 19: 693–697.

²² Halperin DT and Bailey RC. 1999. Male circumcision and HIV infection: Ten years and counting. *Lancet* 354: 1813–1815.

the hypothesis that male circumcision biologically protects men against acquiring HIV.^{23,24,25}

Despite the ecological and observational evidence, some skepticism remained about whether unmeasured differences between circumcised and uncircumcised men were resulting in lower HIV in circumcised men. To conclusively test the hypothesis that male circumcision biologically protects men against acquiring HIV, RCTs were needed. The ecological and observational studies provided the ethical justification needed to randomly assign study participants either to undergo male circumcision or to remain uncircumcised. Because the process of randomization is entirely one of chance, it ensures that men in the circumcised and uncircumcised study arms are/will be different in only one way: the presence or absence of their foreskin. Thus, if the risk of HIV is different between the two groups of men over time, the difference is attributable to circumcision. As with the observational studies, men were also asked about risk behaviors while in the study, in case men randomized to undergo circumcision behaved differently than those randomized to remain uncircumcised. The results of three RCTs revealed that the circumcised men experienced an HIV infection rate that was 60% lower than the infection rate of uncircumcised men.²⁶ It was at this point that WHO and UNAIDS issued recommendations for male circumcision and gave priority to countries with generalized (heterosexual) epidemics, high HIV prevalence and low male circumcision prevalence.²⁷

Although the scientific evidence that male circumcision provides partial biological protection against HIV acquisition is irrefutable, some researchers still question whether the men who enrolled in the RCTs were similar enough to men in the general population. It stands to reason that if the men in the trials were very different from men in the general population, then scaling up VMMC in the general population might not result in the same reductions in HIV infection that were as seen in the RCTs. However, community-level studies from Uganda and South Africa have since demonstrated that the rate of HIV infection is lower among circumcised men compared to uncircumcised men.^{28,29} In these studies, men who received circumcision did so as part of routine health services and not as part of an RCT. Therefore, it is clear that when men in the general population receive circumcision as a routine service (instead of as a research intervention), their risk of HIV is reduced—a finding that is consistent with the RCT findings.

WHO prioritized expansion of VMMC in 14 countries with generalized (heterosexual) epidemics, high HIV prevalence, and low male circumcision prevalence. What about areas within these countries where HIV is more prevalent among circumcised men than uncircumcised men? These data, which seem contradictory to the RCT findings, are from cross-sectional surveys, meaning that the data were collected at a single point in time. It is not possible to know whether men in these populations were circumcised before becoming infected with HIV, or after. Men may have been infected with HIV when they were uncircumcised and later decided to become circumcised for clinical or other reasons. Also, cross-sectional data about circumcision status are based on self-reporting. Studies have revealed that many men report being circumcised when actually

²³ Cameron DW et al. 1989. Female to male transmission of human immunodeficiency virus type 1: Risk factors for seroconversion in men. *Lancet* 2: 403–407.

²⁴ Weiss HA, Quigley MA and Hayes RJ. 2000. Male circumcision and risk of HIV infection in sub-Saharan Africa: A systematic review and meta-analysis. *AIDS* 14: 2361–2370.

²⁵ Quinn TC et al. 2000. Viral load and heterosexual transmission of human immunodeficiency virus type 1. Rakai Project Study Group. *N Eng J Med* 342: 921–929.

²⁶ Gray et al., 2007; Bailey et al., 2007; Avert et al. 2005.

²⁷ World Health Organization. 2007. *New Data on Male Circumcision and HIV Prevention: Policy and Programme Implications*. WHO: Geneva.

²⁸ Kong G et al. 2012. Longer-Term Effects of Male Circumcision on HIV Incidence and Risk Behaviors during Post-Trial Surveillance in Rakai, Uganda. Paper #36. 18th Conference on Retroviruses and Opportunistic Infections, February 27–March 2, Boston, Mass.

²⁹ Avert BH et al. 2012. Decrease of HIV Prevalence over Time among the Male Population of Orange Farm, South Africa, following a Circumcision Roll-out (ANRS-12126). Presentation at the 2012 International AIDS Conference, July 22–27. Washington, DC. Abstract TUAC0403.

they either are not circumcised at all or are only partially circumcised.^{30,31} For these reasons and others, cross-sectional data cannot be used to prove a causal relationship. Nevertheless, skeptics often refer to cross-sectional data to refute the gold standard scientific evidence provided by the RCTs.³²

There will always be extraordinary examples of people who seem to defy science. For instance, most of us know people who have smoked cigarettes throughout their adult lives but have not developed lung cancer. Some exceptionally health-conscious athletes have heart attacks at an early age. The international recommendations for VMMC are based on overwhelming evidence provided through the scientific process. Cross-sectional data provided clues about hypotheses that warranted further and more rigorous investigation. These investigations have been completed and the findings are conclusive. Using cross-sectional data now to refute the conclusive findings demonstrates a lack of understanding of the limits of cross-sectional data and the overall scientific process for testing hypotheses.

What If the Foreskin Is Found to Be Protective against Another Disease? What Will We Do Then?

It is extremely unlikely that the recommendation to circumcise will change. Male circumcision has been widely practiced around the world for thousands of years. There is no evidence that it poses risks to health. On the contrary, there is much evidence in support of the health benefits of VMMC. Male circumcision reduces the acquisition and transmission of a number of other diseases, including HPV (which causes cervical and penile cancers) and herpes.^{33,34} Furthermore, male circumcision prevents infections and other problems with the foreskin and reduces the rates of urinary tract infections in infants and young boys.³⁵

Why Are People So Excited about Male Circumcision Medical Devices?

Any medical device that is developed for adult male circumcision must first be shown to be safe and effective at removing the foreskin. In addition, a device-based procedure would ideally be quicker than the surgical methods, inexpensive, highly acceptable to the male population, and usable by trained nurses and other nonphysicians. The goal of 80% male circumcision coverage by 2016 (20 million male circumcision procedures) is daunting, particularly since it took five years to complete the first one million procedures. A medical male circumcision device with many or all of the ideal characteristics could greatly assist in the scale-up of VMMC.

As with any medical device or service, the cost of a male circumcision medical device must be considered in the context of human lives saved and illness averted. If one or more devices are found to be safe and effective, and WHO recommends them for use in adults, organizations such as PEPFAR and other donors will begin purchasing them for countries who wish to make VMMC devices available. PEPFAR and donors such as the Global Fund have a long history of using their significant purchasing power to negotiate reasonable prices for HIV-related products and pharmaceuticals. For example, thanks to donors, millions of people now have access to antiretroviral therapy at a reasonable price.

³⁰ Thomas AG et al. 2011. Voluntary medical male circumcision: A cross-sectional study comparing circumcision self-report and physical examination findings in Lesotho. *PLoS ONE* 6(11): e27561. doi:10.1371/journal.pone.0027561

³¹ Hewett PC et al. 2012. The (mis)reporting of male circumcision status among men and women in Zambia and Swaziland: A randomized evaluation of interview methods. *PLoS ONE* 7(5): e36251. doi:10.1371/journal.pone.0036251

³² Thomas et al., 2011.

³³ Auvert BE et al. 2009. Effect of male circumcision on the prevalence of high-risk human papillomavirus in young men: Results of a randomized controlled trial conducted in Orange Farm, South Africa. *J Infect Dis* 199:14–19.

³⁴ Castellsagué et al., 2002.

³⁵ Wiswell TE and Hachey WE. 1993. Urinary tract infections and the uncircumcised state. *Clin Pediatr* 32: 130–134.