

# Penile circumcision to reduce the risk of HIV infection

## Summary

Penile circumcision is the surgical removal of the foreskin from the penis. The foreskin is highly vulnerable to HIV infection. Circumcision of the penis provides some protection against HIV infection for heterosexual men. Circumcision does not protect most men who have sex with men, although it may provide some protection for men who engage only in insertive anal sex (topping). Penile circumcision does not protect women from HIV transmission.

In Canada, circumcision is not recommended as a method of preventing HIV.

## What is penile circumcision?

Penile circumcision is the surgical removal of the foreskin—a retractable fold of skin that covers the head of the penis. Circumcision is most commonly performed on infants, although it can be done later in life too. It is performed for a variety of social, religious, cultural and health reasons.

## How common is penile circumcision in Canada?

Fewer and fewer parents are choosing to circumcise their boy babies: Whereas in 1996–97, an estimated 20% of boy babies were circumcised, in 2005, that number dropped to 9.5%. As of 1996, the Canadian Paediatric Society no longer recommends the routine circumcision of newborns because they feel that evidence of the risks and benefits of circumcision are evenly balanced.

## Does circumcision of the penis reduce the risk of HIV transmission?

**For men who have sex with women:** Penile circumcision *does* provide protection for HIV-negative men who are at risk of HIV infection through vaginal sex with women. Research studies in East and South Africa found that circumcised heterosexual men were approximately 50% to 60% less likely to become infected with HIV than uncircumcised men. The circumcised men were also at reduced risk of herpes, syphilis and human papillomavirus (HPV).

**For women who have sex with men:** Penile circumcision *does not* provide protection for HIV-negative women who are at risk of infection through vaginal sex with men. Although an HIV-negative circumcised man is less likely to *become infected* with HIV through

vaginal sex, an HIV-positive circumcised man is not less likely to *pass* HIV to others.

#### **For men who have sex with men (MSM):**

Penile circumcision *does not* provide protection for HIV-negative men who are at risk of HIV infection through insertive and receptive anal sex (topping and bottoming) with other men. However, some studies suggest that circumcision of the penis may protect HIV-negative men from HIV if they engage only in insertive anal sex (topping).

#### **How does circumcision of the penis reduce the risk of HIV infection?**

The foreskin is highly vulnerable to HIV infection. It is the main route by which HIV enters a man's body to cause infection during sexual intercourse. Removing the foreskin makes it more difficult for HIV to find a way into the body during sex.

The foreskin is highly vulnerable to HIV infection for several reasons. First, the foreskin is delicate and can sustain small tears during sex. These tears may allow HIV to enter the body more easily. Tears also cause inflammation, which can further increase the risk of HIV transmission. In addition, there is a higher concentration of cells that HIV likes to infect (called Langerhans cells) in the foreskin than in other parts of the penis. Finally, HIV-infected fluids can become trapped under the foreskin and remain there after sex.

#### **Why is circumcision less beneficial for MSM?**

Many MSM are not only tops (the insertive partner) but also bottoms (that is, they also have receptive anal sex). Circumcision of the penis would not protect an HIV-negative man when he bottoms because HIV would enter the body through the anus or rectum, and not the foreskin of the penis. In addition, because the risk of transmission is so much higher when a man bottoms than when he tops, circumcision may not protect him even if he bottoms only occasionally.

While circumcision may provide some protection for gay men who only top, the degree of protection (if any) has yet to be determined.

#### **Where is penile circumcision being promoted as a method of HIV prevention?**

The World Health Organization (WHO) recommends voluntary *adult* penile circumcision as a method of HIV prevention in countries with heterosexual HIV epidemics, an HIV prevalence over 15%, and low circumcision prevalence. Programs that offer circumcision to adult men are being expanded in many countries in Eastern and Southern Africa.

#### **Is penile circumcision recommended as a method of HIV prevention in Canada?**

No, penile circumcision is not recommended as a method of HIV prevention in Canada.

Canada does not fit the WHO criteria mentioned above. The HIV/AIDS epidemic in Canada is largely concentrated in populations that are unlikely to benefit from circumcision—people who use injection drugs and MSM.

The heterosexual transmission of HIV in Canada is increasing. Penile circumcision might play a role in reducing HIV infections among heterosexual men in Canada; however, it is unclear whether the results from the research studies among heterosexual men in East and South Africa apply to men in countries with low HIV incidence, such as Canada. The Centers for Disease Control and Prevention (CDC) in the United States has concluded that enough evidence exists to inform heterosexual men about the benefits of circumcision in reducing the risk of HIV infection. The Canadian Paediatric Society is in the process of reviewing its guidelines in light of the recent research on circumcision.

Heterosexual men or men who have sex with men who are considering circumcision as a method of reducing their risk of HIV infection need to understand that it does not provide

100% protection and should not replace more effective methods of HIV prevention such as condoms.

---

### Credits

Author: James Wilton  
2012

### References

- Auvert B, Taljaard D, Lagarde E et al. Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. *PLoS Med.* 2005 Nov;2(11):e298.
- Bailey RC, Moses S, Parker CB et al. Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial. *Lancet.* 2007 Feb 24;369(9562):643-56.
- Canadian Paediatric Society. Neonatal circumcision revisited. Position statement, 1996. Available from: [www.cps.ca/english/statements/FN/fn96-01.htm#CONCLUSIONS](http://www.cps.ca/english/statements/FN/fn96-01.htm#CONCLUSIONS)
- Gray RH, Kigozi G, Serwadda D et al. Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. *Lancet.* 2007 Feb 24;369(9562):657-66.
- Gray RH, Kigozi G, Serwadda D et al. The effects of male circumcision on female partners' genital tract symptoms and vaginal infections in a randomized trial in Rakai, Uganda. *American Journal of Obstetrics and Gynecology.* 2009 Jan;200(1):42.e1-7.
- Smith DK, Taylor A, Kilmarx PH et al. Male circumcision in the United States for the prevention of HIV infection and other adverse health outcomes: report from a CDC consultation. *Public Health Reports (Washington, D.C., 1974).* 2010 Jan-Feb;125 Suppl 1:72-82.
- Weiss HA, Thomas SL, Munabi SK, Hayes RJ. Male circumcision and risk of syphilis, chancroid, and genital herpes: a systematic review and meta-analysis. *Sexually Transmitted Infections.* 2006 Apr;82(2):101-109; discussion 110.
- Wiyongse CS, Kongnyuy EJ, Shey M et al. Male circumcision for prevention of homosexual acquisition of HIV in men. *Cochrane Database of Systematic Reviews.* 2011;6:CD007496.



Canada's source for  
HIV and hepatitis C  
information

### Contact us

**by telephone**  
1.800.263.1638  
416.203.7122

**by e-mail**  
[info@catie.ca](mailto:info@catie.ca)

**by fax**  
416.203.8284

**by mail**  
505-555 Richmond Street West  
Toronto ON M5V 3B1

### Disclaimer

**Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.**

CATIE (Canadian AIDS Treatment Information Exchange) in good faith provides information resources to help people living with HIV and/or hepatitis C who wish to manage their own healthcare in partnership with their care providers. Information accessed through or published or provided by CATIE, however, is not to be considered medical advice. We do not recommend or advocate particular treatments and we urge users to consult as broad a range of sources as possible. We strongly urge users to consult with a qualified medical practitioner prior to undertaking any decision, use or action of a medical nature.

We do not guarantee the accuracy or completeness of any information accessed through or published or provided by CATIE. Users relying on this information do so entirely at their own risk. Neither CATIE nor the Public Health Agency of Canada nor the Ontario Ministry of Health and Long-Term Care, nor any of their employees, directors, officers or volunteers may be held liable for damages of any kind that may result from the use or misuse of any such information. The views expressed herein or in any article or publication accessed or published or provided by CATIE are solely those of the authors and do not reflect the policies or opinions of CATIE nor the views of the Public Health Agency of Canada nor the Ontario Ministry of Health and Long-Term Care.

### Permission to reproduce

This document is copyrighted. It may be reprinted and distributed in its entirety for non-commercial purposes without prior permission, but permission must be obtained to edit its content. The following credit must appear on any reprint: *This information was provided by the Canadian AIDS Treatment Information Exchange (CATIE). For more information, contact CATIE at 1.800.263.1638.*

Funding has been provided by the Public Health Agency of Canada.

CATIE Ordering Centre No: ATI-50217  
(aussi disponible en français, ATI-50218)

CATIE fact sheets are available for free at [www.catie.ca](http://www.catie.ca)

