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
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References


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