

## HEALTH DISCOVERIES IN MALE CIRCUMCISION

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### The Public Health and Clinical Benefits of Male Circumcision

Male circumcision, the surgical removal of the foreskin, is one of the oldest and most frequently performed surgical procedures globally. Its origins are deeply rooted in religious, cultural, and social traditions, predating recorded history in many regions, including ancient Egypt and the Abrahamic faiths (mainly Muslims and Jews) (Wiswell, 2021). Today, however, the discussion surrounding male circumcision has moved beyond its ancient significance to centre on its demonstrable clinical efficacy and growing recognition as a pivotal public health intervention (Morris & Wamai, 2023).

While contemporary discussions primarily focus on biomedical benefits, male circumcision holds profound religious significance within the Abrahamic faiths—Judaism, Islam and even Christianity (some within this faith practice it). In Judaism, the practice is commanded as the fundamental “Brit Milah” (Covenant of Circumcision), performed on the eighth day of a male child’s life, symbolizing the eternal covenant between God and the Jewish people (Wiswell, 2021). In Islam, while not explicitly mentioned in the Qur’an, male circumcision, known as *Khitan*, is universally observed as a major Sunnah (recommended practice) and a rite of purification, typically performed in childhood. The Prophet -PBUH- said :“Five acts are part of natural instinct: circumcision, shaving pubic hair, plucking hair from the armpits, shortening the moustache and clipping the nails”.

Christianity’s relationship with the practice is more complex; early debate, documented in the New Testament (Acts 15), led to the eventual abandonment of physical circumcision as a religious requirement for Gentile converts, shifting the focus to spiritual

“circumcision of the heart” (Wiswell, 2021). Nevertheless, many Christians today especially in Canada and the USA practice male circumcision for the health benefits only.

Globally, the prevalence of male circumcision is estimated to be approximately 38% of the male population, though this figure varies dramatically by geographic region, religion, and national policy. In Muslim countries it is very much widely practiced. Over the last two decades, major public health organizations, including the World Health Organization (WHO) and UNAIDS, have actively endorsed voluntary medical male circumcision in priority settings as a key component of comprehensive HIV prevention strategies (WHO/UNAIDS, 2022). This endorsement is grounded in a substantial body of evidence demonstrating that the procedure confers significant, multifaceted health benefits to men and, indirectly, to their female partners. This article will comprehensively review the principal clinical and public health benefits of male circumcision, focusing on its protective effects against infectious diseases, its role in mitigating penile-specific pathologies, and its contribution to general hygiene and partner health. The WHO (WHO 2007) stipulates that male circumcision was found to reduce up to 60% of HIV/AIDS infections.

The most compelling body of evidence supporting the public health benefit of male circumcision relates to its effectiveness in reducing the sexual transmission of the Human Immunodeficiency Virus (HIV). This paradigm shift in global health policy began with three large-scale, independently conducted randomized controlled trials (RCTs) performed in high-prevalence regions of sub-Saharan Africa between 2005 and 2007. These trials collectively provided conclusive proof that male circumcision significantly reduces the risk of

heterosexually acquired HIV infection in men. Specifically, the trial conducted in Orange Farm, South Africa, demonstrated a 60% reduction in HIV acquisition risk (Auvert et al., 2005). Concurrently, studies in Rakai, Uganda (Bailey et al., 2007), and Kisumu, Kenya (Wawer et al., 2006), reported risk reductions of 51% and 53%, respectively. Following the early termination of these trials due to the clear, overwhelming evidence of efficacy, a subsequent meta-analysis confirmed that circumcision provides a durable 50–60% reduction in the risk of sexual transmission of HIV (Siegfried et al., 2018). This level of protection makes it one of the most effective non-vaccine-based biomedical prevention tools available.

The protective effect of male circumcision is attributed to the unique anatomical and immunological characteristics of the inner foreskin tissue. The inner mucosal surface of the foreskin is rich in target cells for HIV, particularly Langerhans cells and CD4+ T-cells, which are easily penetrated by the virus during sexual intercourse (Patterson et al., 2002). Furthermore, the thin, non-keratinized epithelial layer of the inner foreskin is prone to micro-abrasions during intercourse, creating direct portals of entry for the virus. The moist, warm environment created by the presence of the foreskin can also potentially increase the survival of the virus outside host cells (O'Farrell, 2012). By removing the foreskin, circumcision eliminates this highly vulnerable tissue, replacing it with more robust, keratinized skin from the penile shaft, and reduces the moist sub-preputial space. This intervention effectively lowers both the immediate physical and immunological susceptibility to HIV infection. In terms of public health impact, the procedure has proven to be highly cost-effective in the fourteen priority countries in Eastern and Southern Africa targeted for male circumcision scale-up (Varghese et al., 2021). Mathematical modelling studies have shown that high rates of circumcision coverage in these regions can avert millions of new HIV infections, leading to substantial public health savings and significantly altering the trajectory of the HIV epidemic (WHO/UNAIDS, 2022).

Beyond HIV, male circumcision offers substantial protection against a range of other common sexually transmitted pathogens, further solidifying its value as a general preventative health measure. Herpes Simplex Virus Type 2 (HSV-2), the virus responsible for genital herpes, is a major co-factor in HIV transmission. Studies conducted alongside the African RCTs found that male circumcision reduces the risk of HSV-2 acquisition in men by approximately 30% (Tobian et al., 2009). Furthermore, Male circumcision has been consistently

associated with a reduced prevalence and incidence of high-risk (oncogenic) Human Papillomavirus (HPV) types in men (Alhajjaj et al., 2020). The protective effect is believed to stem from the removal of the sub-preputial space, which can harbour the virus, and the decrease in micro-abrasions that facilitate viral entry. While the evidence is less extensive, some clinical and observational studies suggest that male circumcision may also provide a moderate degree of protection against ulcerative STIs, such as syphilis and chancroid (Lau et al., 2011).

In addition to protection against infectious diseases, male circumcision is highly effective in preventing several non-infectious conditions that affect the glans and foreskin, including a significant reduction in the incidence of penile cancer. Circumcision eliminates the possibility of several common, painful, and recurrent conditions of the uncircumcised penis. This includes phimosis, characterized by the inability to retract the foreskin fully over the glans, and balanitis and balanoposthitis, which are inflammations of the glans and foreskin often caused by poor hygiene, fungal, or bacterial infections (Van Howe & Light, 2000; Herz et al., 2023). By eliminating the sub-preputial space where moisture and cellular debris accumulate, circumcision dramatically reduces the incidence of these infections. More critically, a robust body of epidemiological data demonstrates a strong inverse correlation between male circumcision and the risk of developing penile squamous cell carcinoma (Ting & Blalock, 2019). The protective effect is believed to be near-absolute when the procedure is performed in infancy, stemming from two factors: improved hygiene reducing chronic inflammation and the reduction in high-risk HPV infection (Morris et al., 2017).

The protective health effects of male circumcision are not confined to the male individual; they extend significantly to female partners, primarily through the reduction of oncogenic viral carriage. Since cervical cancer is almost entirely attributable to persistent infection with high-risk HPV types, a reduction in a man's carriage of and transmission of HPV is expected to lower their female partners' exposure. Longitudinal studies have provided evidence supporting this link, showing that female partners of circumcised men have a lower prevalence of high-risk HPV infection and a lower incidence of cervical cancer (Bosch et al., 2002). A systematic review found that women who had circumcised partners had a significantly lower risk of being diagnosed with cervical cancer compared to women with uncircumcised partners (Wamoyi et al., 2017). Similarly, by reducing the

prevalence of viral STIs like HSV-2 and bacterial STIs in men, male circumcision contributes to a reduced burden of these infections in their female partners, thereby contributing to overall community health.

Despite these public health benefits, the necessity of routine neonatal circumcision in low-risk populations remains a subject of ongoing ethical and clinical debate. A primary ethical concern involves the non-consensual nature of the procedure in infants and its irreversible outcomes. Cultural, religious, and parental values frequently influence the decision to circumcise, often taking precedence over strictly medical considerations. In contrast, adult circumcision—whether elective or medically indicated—entails a distinct risk-benefit profile. While the rate of complications tends to be higher in adults, the procedure benefits from the individual's capacity to provide informed consent, thereby mitigating some of the ethical challenges associated with infant circumcision.

The ethical implications of performing irreversible surgery on non-consenting minors have generated considerable critique. Opponents argue that non-therapeutic circumcision infringes upon a child's right to bodily autonomy and may constitute a form of genital mutilation, particularly when there is no immediate medical indication. These concerns have been raised by several medical and ethical bodies, including the Royal Dutch Medical Association and the German Ethics Council, both of which have questioned the permissibility of routine infant circumcision absent direct clinical necessity. While male circumcision remains legal and widely practiced in many regions—driven by religious, cultural, and health rationales—its legitimacy is increasingly challenged in secular and rights-based legal frameworks. These are questions that need to be discussed openly. It is also worth mentioning that many male circumcisions in the West are done and organised in hospitals and medical centres where full hygiene and safety are guaranteed.

Finally, while the health benefits are substantial, male circumcision is a surgical procedure, and its public health implementation must be viewed alongside its safety profile. When performed by appropriately trained healthcare professionals under sterile conditions, the procedure has an excellent safety record. Studies consistently show that the complication rate for medical male circumcision, particularly when performed in infancy, is very low, typically under 1% for both immediate and delayed complications (Laguna et al., 2020). For circumcision programs targeting adolescents

and adults in sub-Saharan Africa, complication rates are also low, ranging from 1.5% to 3.5%, with the overwhelming majority being minor and manageable (Brouwer et al., 2017). The benefits discussed underscore the importance of promoting VMMC as part of a voluntary, ethical, and comprehensive sexual and reproductive health strategy. Consent is paramount, and the promotion of the procedure must always be framed as an additional protective measure, particularly condom use. All circumcision programs must ensure informed consent, sterile technique, and adequate post-operative care.

In conclusion, the body of evidence regarding the clinical and public health benefits of male circumcision is robust and continually expanding. From its decisive role in HIV prevention to its significant protective effects against common STIs and its virtual elimination of penile cancer, the procedure provides substantial, durable protection for the individual. The protective effects extending to female partners, contributing to the reduction of oncogenic HPV and cervical cancer incidence, are equally critical. While ethical and cultural sensitivities must always be respected, the medical literature unequivocally supports the promotion of voluntary medical male circumcision as a high-impact, cost-effective, and safe intervention. As global health strategies continue to evolve to meet the challenges of STIs and reproductive health, male circumcision stands out as a powerful, established tool with proven benefits for both men and the communities they live in.

## References :

- Alhajjaj, K. M. et al. (2020) 'Male Circumcision and Human Papillomavirus Infection: A Systematic Review and Meta-Analysis'.
- Auvert, B. et al. (2005) 'Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk'.
- Bailey, R. C. et al. (2007) 'Male Circumcision for HIV Prevention in Young Men in Kisumu, Kenya: A Randomised Controlled Trial'.
- Bosch, F. X. et al. (2002) 'Male Circumcision and Cervical Cancer: A Review of the Evidence'.
- Brouwer, W. et al. (2017) 'Adverse Events Following Voluntary Medical Male Circumcision for HIV Prevention: A Systematic Review and Meta-Analysis'.

- Herz, M. et al. (2023) 'Circumcision and the Risk of Balanitis and Balanoposthitis in Adults: A Systematic Review'.
- Laguna, V. C. et al. (2020) 'Safety of Neonatal Circumcision: A Review of Current Data'.
- Lau, B. et al. (2011) 'Male Circumcision and the Prevention of Syphilis: A Meta-Analysis'.
- Morris, B. J. and Wamai, R. G. (2023) 'Male Circumcision: A Major Public Health Intervention'.
- Morris, B. J. et al. (2017) 'Circumcision and Penile Cancer'.
- O'Farrell, N. (2012) 'The role of the foreskin in the sexual transmission of HIV'.
- Patterson, B. K. et al. (2002) 'Target Cells for HIV Infection in the Foreskin of Men'.
- Siegfried, N. et al. (2018) 'Male Circumcision for Preventing Heterosexual Acquisition of HIV in Men'.
- Ting, D. W. and Blalock, H. (2019) 'Circumcision and the Incidence of Penile Cancer: A Population-Based Study'.
- Tobian, A. A. et al. (2009) 'Male Circumcision for the Prevention of HSV-2 and HPV Infections'.
- Van Howe, R. S. and Light, M. J. (2000) 'Medical Indications for Circumcision in the Male Newborn'.
- Varghese, B. et al. (2021) 'Cost-Effectiveness of Voluntary Medical Male Circumcision in Sub-Saharan Africa'.
- Wamoyi, J. et al. (2017) 'Male Circumcision and Female Partners' Risk of Cervical Cancer: A Systematic Review'.
- Wawer, M. J. et al. (2006) 'Circumcision in male adults and adolescents for HIV prevention in Rakai, Uganda: A randomised controlled trial'.
- WHO/UNAIDS (2022) Voluntary Medical Male Circumcision for HIV Prevention: Revised Guidance.
- Wiswell, T. E. (2021) 'History of Circumcision'.
- WHO (2007) report on male circumcision and HIV prevention: policy and programme implications [https://www.who.int/publications/i/item/9789241595988#:~:text=Download%20\(3.4%20MB\)-,Overview,978%2092%204%20159598%208](https://www.who.int/publications/i/item/9789241595988#:~:text=Download%20(3.4%20MB)-,Overview,978%2092%204%20159598%208)