

## **Male Circumcision – A Dangerous Mistake in the HIV Battle**

### *Summary*

Mass male circumcision is being promoted as a method of curbing the AIDS pandemic in sub-Saharan Africa. Stopping the spread of HIV requires using available resources strategically, and circumcision's costs and harms are too significant to ignore. Mass circumcision campaigns will divert resources from proven prevention programs, result in a high number of complications, increase risk-compensation behaviors, and put women at higher risk for HIV.

Circumcision is a relatively expensive and risky procedure that was shown to reduce risk by 50–60% for heterosexual males only in three highly controlled, short-term clinical trials. However, condom promotion and safe-sex education have already been shown to reduce infection rates more effectively for both males and females, at a lower cost. Furthermore, anti-retroviral drugs have shown a promising 92% reduction in HIV transmission.<sup>1</sup>

Adult males are vulnerable to the belief that circumcision offers them immunity from HIV,<sup>2</sup> raising ethical concerns about promoting adult male circumcision, and questions regarding the effectiveness of the intervention.

Some have proposed circumcising infants, but this, too, has ethical ramifications.<sup>3</sup> Removing healthy tissue from children deprives them of their right to autonomy. Surgery of any kind places them at immediate risk from complications, while the HIV benefit, if any, is 15–20 years away.

Male circumcision does not protect women;<sup>4</sup> in fact, it may increase their risk of contracting HIV.<sup>5</sup> And circumcision does not protect men who have sex with men.<sup>6 7</sup>

### *Background*

Results from three randomized clinical trials (RCTs) in Africa, showing a reduction in female-to-male transmission of HIV after circumcision, have resulted in the promotion of mass male circumcision to reduce HIV transmission.<sup>8 9 10</sup> This has been followed by the mobilization of vast sums of money from international health agencies and foundations to roll out mass surgical interventions in sub-Saharan Africa, and to influence male infant circumcision policy in the United States.

### *Questionable RCT Results*

A number of factors present in the studies warrant caution in extrapolating results to larger populations. More than 700 participants were lost to follow-up, their HIV status unknown. In other words, 4.5 times more participants were lost to follow-up than were reported to have been protected from HIV by circumcision. Further, a number of reported HIV infections were contracted non-sexually.<sup>11</sup> Unlike in a real-world setting, study participants were provided free condoms, extensive education and counseling, and they were paid—all of which could have biased the results.

All three RCTs were halted earlier than contemplated in the original study designs. In one study, the circumcised men's infection rates were increasing (studies terminated early tend to overestimate the treatment effect<sup>12</sup>). All participants not initially circumcised were then offered circumcision, eliminating the possibility of a follow-up. We will never know if the short-term effect was permanent.

The first Cochrane Collaboration Report on circumcision cautioned about researcher bias, stating: "Circumcision practices are largely culturally determined, so there are strong beliefs and opinions

surrounding them. It is important to acknowledge that researchers' personal biases and dominant circumcision practices of their respective countries may influence interpretation of findings."<sup>13</sup> The Cochrane Collaboration has since issued another report, which no longer warns against researcher bias, and, rather mystifyingly, proclaimed that no more research is needed on the relationship between circumcision and HIV.<sup>14</sup>

The only certain conclusion that can be drawn from the RCTs is that while circumcision might *delay* HIV infection for circumcised males at high risk, it has no effect on infection rates for women, and is irrelevant for children.

### *Contradictory Evidence*

Two recent studies examining African circumcision rates and HIV prevalence found that circumcision status was not significantly associated with HIV. One study examined data from 13 sub-Saharan countries found no association,<sup>15</sup> and another found that circumcision made no difference in HIV rates in South Africa.<sup>16</sup> A 2007 study concluded that, once commercial sex-worker patterns are factored in, male circumcision is not significantly associated with lower HIV.<sup>17</sup>

Recent evidence demonstrates that Langerhans cells in the foreskin have a protective effect against pathogens, including HIV, by secreting langerin.<sup>18</sup> The original theory (which led to promoting circumcision to stop HIV) was that Langerhans cells are an entry point for viruses. It now appears that the theory was partially true, but that the mechanism at work is that Langerhans cells set a trap for viruses in order to destroy them with langerin. It is plausible that Langerhans cells are only infected by HIV when they are challenged by a high viral load.

### *Male Circumcision May Increase Risk of HIV*

The long-term consequences of promoting circumcision could actually worsen the HIV epidemic by promoting a false sense of security and undermining safe-sex practices and condom usage.<sup>19 20</sup> African men are already lining up to be circumcised, believing they will no longer need to use condoms.<sup>21 22 23</sup> Assuming the 50–60% protective effect found in the RCTs is valid, and if all African males were circumcised over the next 15 years and all other conditions were held constant, circumcision would reduce the number of infections by 8%, and related deaths by 1%.<sup>24</sup> It is unknown how many additional infections and deaths would occur from HIV-positive circumcised men transmitting the virus to their female partners, and from the iatrogenic spread of the virus—not to mention the number of circumcision complications that would occur.

HIV infections have been found following the circumcision of virgins, both male and female, indicating that circumcision spreads iatrogenically—probably from multiple use of contaminated instruments.<sup>25 26</sup> Also troubling as an indicator of what is to come is the recent announcement that in Swaziland, circumcised males are being targeted as blood donors, because they are considered to be “the safe group for blood donation”<sup>27</sup>—irrespective of whether the individuals have been tested for HIV. In resource-poor countries of the world, blood transfusion remains a major avenue of transmission of HIV, and much of the blood supply is not tested.<sup>28</sup>

### *Male Circumcision Endangers Women*

Male circumcision not only offers no protection to women,<sup>29</sup> but it increases the risk to women if sex is resumed before the wound has completely healed.<sup>30</sup> A recent WHO study found that one-quarter of circumcised males still had not healed sixty days after the surgery.<sup>31</sup> Further, circumcision places women at greater risk of unsafe sex practices if they or their circumcised male partners wrongly believe they are immune to HIV.

### *Circumcision Will Result in Burdensome Complications*

A recent issue of the WHO Bulletin noted that African ritual circumcisions have a 35% complication rate, while clinical circumcisions have an 18% complication rate.<sup>31</sup> A neonatal circumcision complication rate of 20.2% was found in Nigeria.<sup>32</sup> Dealing with these complications will divert even more resources away from other programs.

### *Unethical Medical Practice*

Circumcision permanently removes healthy, functional, beneficial tissue.<sup>33</sup> Mass prophylactic surgery is unprecedented, and there are sensible, safe and effective alternatives.<sup>34</sup> Circumcised men still must wear condoms for protection (as well as to protect their sexual partners), and there is no evidence that being circumcised and wearing condoms is any better than wearing condoms alone. Further, because circumcision can actually increase the risk of infection with HIV, and in view of the complications and negative consequences of the surgery, promoting it as a public health measure is unethical.

### *Informed Consent*

For fully informed consent to occur, men must be educated about the risks and sensory losses from circumcision, as well as be made aware that it does not offer full protection and that they will still need to wear condoms during sex. The number of reports emerging regarding African males agreeing to circumcision so they will no longer need to use condoms reveals that fully informed consent is not always occurring.<sup>35 36 37</sup>

### *Effective Prevention Programs Already Exists*

Education, safe-sex practices, and consistent condom use are proven, effective measures of curbing HIV transmission. Uganda demonstrated a 47% reduction in HIV prevalence from increased safe-sex education and condom promotion; this social-prevention program is available now, is highly effective, and does not involve the numerous risks and losses from surgery.<sup>38</sup> A 2008 study revealed that condoms are 98% effective at hindering HIV transmission, and 95 times more cost-effective than circumcision.<sup>39</sup> Consistent condom use reduces lifetime risk by 20%<sup>40</sup> as compared to circumcision's 8%.<sup>24</sup> A recent report from South Africa shows condom use significantly increased from 2002 to 2008, and the HIV rates finally began to level off.<sup>41</sup> Diverting resources to circumcision will impede this progress.

A study using mathematical impact modeling of circumcision, anti-retroviral therapy, and condom use in South Africa concluded: "Male circumcision was found to have considerably lower impact than condom use or antiretroviral therapy on HIV infection and death rates."<sup>42</sup> Another study showed that anti-retroviral drugs reduced transmission by 92%, far more effective than any reduction claimed by proponents of circumcision.

### *Conclusion*

Promoting an intervention that at best reduces the probability of infection for males only, while creating a false sense of security and risk of iatrogenic HIV transmission, is irresponsible and unethical. Circumcision offers no protection for men who have sex with men, and may increase the risk to women. Male circumcision will result in unacceptable complications, the treatment of which will further burden the inadequate healthcare infrastructure of developing countries. Promoting male circumcision drains resources that should be devoted to proven measures such as condom promotion, increased safe-sex education, and increased anti-retroviral drug distribution.

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