

Recommendations for Providers Counseling Male Patients and Parents Regarding Male Circumcision and the Prevention of HIV Infection, STIs, and other Health Outcomes

Introduction:

These recommendations are intended to assist health care providers in the United States who are counseling men and parents of male infants in decision making about male circumcision conducted by health care providers (i.e. medically performed) as it relates to the prevention of human immunodeficiency virus (HIV) infection, sexually transmitted infections (STIs), and other health outcomes. Such decision making is made in the context of not only health considerations, but also other social, cultural, ethical, and religious factors. Although data have been accumulating about infant male circumcision for many years, clinical trials conducted in Africa between 2005-2010 have demonstrated safety and significant efficacy of voluntary adult male circumcision performed by clinicians for reducing the risk of acquisition of human immunodeficiency virus (HIV) by a male during penile-vaginal sex (“heterosexual sex”). Three randomized clinical trials showed that adult male circumcision reduced HIV infection risk by 50-60% over time¹⁻⁴. These trials also found that medically performed adult circumcision reduced the risk of men acquiring two common sexually transmitted infections (STIs), herpes simplex virus type-2 (HSV-2)^{5,6} and types of human papilloma virus (HPV)^{6,7} that can cause penile and other anogenital cancers, by 30%. Since the release of these trial data, various organizations have updated their recommendations about adult male⁸ and infant male circumcision^{9,10}.

Much of the data related to HIV and STI prevention are from randomized clinical trials (RCTs) conducted among men in sub-Saharan Africa in regions with high rates of heterosexually acquired HIV infection. In the United States, the prevalence of HIV and lifetime risk of HIV infection are generally much lower than that in sub-Saharan Africa. Also, most new HIV infections in the United States are attributed to male-male sex, a population for whom male circumcision has not been proven to reduce the risk of HIV acquisition. While such factors limit the impact of medically performed male circumcision in reducing the overall HIV epidemic in the U.S., there is epidemiologic data to suggest that some subpopulations in the U.S. are likely to benefit. One in every ten estimated new HIV infections in the United States are attributed to female-to-male sexual transmission¹¹. In addition, African-American and Hispanic men have higher risk of HIV infection and lower male circumcision rates than men of other race/ethnicities. Although similar randomized clinical trials have not been conducted in the United States, based on evidence from the African trials, uncircumcised heterosexual men living in areas with high HIV prevalence are likely to experience the most public health risk-reduction benefit from elective male circumcision.

Methods:

A CDC consultation was held in April 2007 to obtain input on the potential role of male circumcision in preventing transmission of HIV in the United States. A summary of the

consultation, including a list of the participants has been previously published¹² and helped define key issues for inclusion in this document.

These recommendations are based on an evaluation of available information on the health risks and benefits associated with high-quality, medically performed male circumcision and were developed to pertain to men and male newborns in the United States¹³. In these recommendations, the preventive benefits of male circumcision are generally expressed as relative-risk reductions (e.g., a 50% reduction from a 2% risk of an STI to a 1% risk), whereas any associated harm is expressed as an absolute risk (e.g., a 2-4% risk of adverse events). Appropriate denominators are not available in many cases to establish an absolute risk for HIV and other STIs in higher-risk populations, e.g., heterosexual males at increased risk for infection.

Recommendations:

1. Consideration of factors associated with decision making

Health benefits and risks of elective neonatal, adolescent, or adult medically performed male circumcision should be considered in consultation with medical providers while taking into account factors associated with decision-making around male circumcision including religion, societal norms and social customs, hygiene, aesthetic preference, and ethical considerations.

2. Counseling sexually active adolescent and adult males regardless of circumcision status

All sexually active adolescent and adult males should continue to use other proven HIV and STI risk-reduction strategies such as reducing the number of partners, and correct and consistent use of male latex condoms, and HIV preexposure or postexposure prophylaxis among others¹.

3. Counseling uncircumcised sexually active adolescent and adult males

Prior to counseling uncircumcised sexually active adolescent and adult males about medically performed male circumcision, their HIV risk behaviors, HIV infection status, and the gender of their sexual partner should be assessed¹⁴. The results of these assessments will inform the discussion with men about the risks and benefits of male circumcision.

3A. Counseling uncircumcised heterosexually and bisexually active adolescent and adult males (i.e., men who have sex with women)

3A-1. An assessment of the patient's risk of acquiring HIV through heterosexual sex should be conducted:

- *Providers should review the patient's HIV risk behavior.*
- *Providers should assess condom use practices, consistency of use, and barriers to use.*

¹ Information about HIV and STD prevention strategies other than medically performed male circumcision can be found at <http://www.dev.cdc.gov/hiv/basics/prevention.html> and <http://www.cdc.gov/std/prevention/default.htm>.

- *Heterosexually and bisexually active adolescent and adult males should be informed that men at high risk of HIV exposure during heterosexual sex include HIV-uninfected men in sexual relationships with:*
 - *An HIV-infected woman (i.e., in an HIV discordant couple);*
 - *One or more women who are at high risk for HIV (this includes commercial sex workers, injection drug users, and women in defined geographic locations with a prevalence of HIV $\geq 1.0\%$);*
 - *Multiple female partners.*

3A-2. All uncircumcised adolescent and adult males who engage in heterosexual sex should be informed about the significant, but partial, efficacy of male circumcision in reducing the risk of acquiring HIV and some STIs through heterosexual sex, as well as the potential harms of male circumcision.

- *Men and male adolescents being counseled about male circumcision should be told that (see Box 1):*
 - *Male circumcision reduces, but does not eliminate, the risk of acquiring HIV and some STIs during penile-vaginal sex. In clinical trials, medically performed male circumcision was associated with reduced number of new herpes simplex virus type 2 (HSV-2) infections and reduced number of oncogenic types of human papilloma virus (HPV) among circumcised men.*
 - *Male circumcision has not been shown to reduce the risk of HIV or STIs during oral or anal sex.*
 - *Male circumcision has not been shown to reduce the risk of HIV transmission to female partners.*
 - *After circumcision, men should not have sex until their health care provider has documented wound healing.*
- *Uncircumcised, HIV-uninfected men and male adolescents at increased risk for HIV acquisition through heterosexual sex should be counseled about the risk and benefits of male circumcision (See Box 1). When a decision is made to undergo male circumcision, a referral for surgical consultation and access to high-quality male circumcision surgical services should be provided.*

3B. Counseling men who have sex with men (exclusively)

Although it is biologically plausible that male circumcision could benefit MSM during insertive sex, no definitive data exist. Currently, there are no study results from RCTs including large enough numbers of MSM and results from observational studies are not conclusive among MSM overall or among MSM who practice exclusively insertive anal sex. For example, some epidemiologic data suggest that male circumcision provides partial protection for the insertive partner during penile-anal sex while other studies do not. In contrast, male circumcision provides no biologically plausible HIV risk-reduction benefit for the anal-receptive partner and receptive anal intercourse carries a substantially higher risk for acquisition of HIV than insertive anal sex.

3B-1. Men who have sex with men should be informed that:

- *The demonstrated benefits of male circumcision for HIV risk reduction apply to heterosexual (penile-vaginal) sex only.*
- *Male circumcision has not been proven to reduce the risk of acquiring HIV or other STIs during anal sex among men.*
- *While some MSM may choose to be circumcised because of the potential to decrease risk for the insertive anal sex partner, male circumcision involves potential risks (see Adverse Events section of Box 1) and costs.*

4. Counseling parents of male newborns, children, or adolescents

Health benefits and risks of elective neonatal, pediatric, or adolescent male circumcision should be considered in consultation with medical providers. In the case of discussion about neonatal circumcision, ideally such discussion should occur prior to the birth of the child. Ultimately, whether to circumcise a male neonate or child is a decision made by parents or guardians on behalf of their newborn son or dependent child.

When counseling parents about male circumcision for an adolescent minor, the adolescent should be included in the decision-making process about undergoing elective male circumcision. When counseling an adolescent inquiring about male circumcision, parents should be engaged in the discussion, unless the adolescent is legally emancipated.

4-A. Parents and guardians should be informed about the medical benefits and risks of neonatal, pediatric, or adolescent medically performed male circumcision (see Box):

- *During infancy, circumcised infants are less likely than uncircumcised infants to experience urinary tract infections (UTIs), although UTIs are uncommon during infancy.*
- *Circumcised boys are less likely than uncircumcised males to experience balanitis and balanoposthitis.*
- *During adulthood, circumcised males are less likely than uncircumcised males to experience penile or possibly prostate cancer.*
- *Other anticipated health benefits derive in part from future prevention of HIV and some STIs acquired through heterosexual sex. The risk for any individual neonate, child, or adolescent cannot be definitively defined at the time that a circumcision decision is made; for example, current risks for HIV and STIs, such as those for a particular individual's racial/ethnic group or gender, may not remain constant in the future.*
- *Considerations for the timing of male circumcision:*
 - *Neonatal male circumcision is, safer, and heals more rapidly than circumcision performed on older boys, adolescent males, and men, and is less expensive.*
 - *Most of the health benefits of male circumcision accrue after sexual debut.*
 - *Male circumcision can also be conducted in adulthood when the individual can make the decision for himself. However, male circumcision after sexual debut could result in missed opportunities for:*

- *HIV and STI prevention during the window period between sexual debut and circumcision*
 - *Prevention of UTIs during infancy.*
- *The most commonly described complications of medically performed male circumcision in the United States are typically uncommon and easily managed. Severe complications are rare in all age groups.*
 - *Among newborns and children age 1 to 9 years, most frequently reported complications include bleeding and inflammation of the penis or the need for corrective procedures². Complications occur in less than 1/2 % of infants, and in approximately 9% of children age 1 to 9 years¹⁵.*
 - *Among persons 10 years of age and older, the most frequently reported complications include those complications reported in younger children as well as wounds of the penis³. Complications occur in approximately 5% of persons in this age group¹⁵. There are not specific data about the frequency of complications in the adolescent age group (13-18).*
- *The American Academy of Pediatrics Taskforce on Circumcision states that the health benefits of newborn male circumcision outweigh the risks and that the benefits of newborn male circumcision justify access to this procedure for families who choose it⁹.*

4-B. Medically performed neonatal, pediatric, or adolescent male circumcision should be done by trained clinicians according to accepted standards of clinical care, with appropriate use of anesthesia.

Contributors: Division of HIV/AIDS Prevention, NCHHSTP, CDC

² Corrective procedures Include repair of incomplete circumcision or removal of any attachments which may form after circumcision between the remaining foreskin and the head of the penis.

³ Any open wound of the penis without additional complications

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Box:

Health Benefits and Risks of Elective Medically Performed Male Circumcision

- ***Health benefits of elective male circumcision in adults and adolescents:***
 - Male circumcision reduces the risk of acquiring HIV infection through penile-vaginal sex by 50-60%, as demonstrated in three well-conducted clinical trials among adult men living in sub-Saharan Africa.
 - In clinical trials involving heterosexual males living in sub-Saharan Africa, male circumcision reduces the risk of some sexually transmitted infections.
 - HSV-2⁴: circumcised men were approximately 30%-45% less likely to acquire HSV-2 infection than were uncircumcised men.
 - HPV⁵: circumcised men were approximately 30% less likely to be infected with high-risk strains of HPV associated with cancers than were uncircumcised men.

- ***Adverse events and risks associated with elective male circumcision of adults:***
 - For adult male circumcision performed by clinicians, the rate of adverse events is between 2% and 4%, with pain, bleeding, infection and unsatisfactory post-surgical appearance most commonly reported. While severe and/or long-term complications have been reported, they are so rare that they have not been precisely established.
 - Adult men who undergo circumcision generally report minimal or no change in sexual satisfaction or function.

- ***Health benefits of neonatal male circumcision:***
 - The estimated annual rate of urinary tract infections (UTIs) in uncircumcised male infants is 0.70%. Male circumcision reduces the risk for infant UTIs by about 80%.
 - In the U.S., the estimated lifetime risk of penile cancer for males is about 1 in 1,400 (0.07%) and that of prostate cancer is about 15%. Neonatal male circumcision reduces the risk of penile carcinoma by about 90% and may reduce the risk of prostate cancer by 15% compared to men who are uncircumcised.

- ***Adverse events and risks associated with neonatal male circumcision:***
 - Adverse events: For male circumcision performed by clinicians,
 - the rate of reported adverse events is as follows
 - 0.4% in infants (age through 12 mo.)
 - 9.1% in children (age 1-9 years)

⁴ HSV-2 = herpes simplex virus type 2

⁵ HPV = human papillomavirus

- 5.3% in persons (age 10 years and older)
- Most commonly reported complications in all age groups include bleeding and inflammation of the penis, and correctional procedures⁶.
- The incidence of severe adverse events associated with male circumcision performed by clinicians, such as permanent disabilities, disfigurements, and death, is so low that rates have not been precisely established; these events have occurred, but are rare. Other major complications requiring intervention including major bleeding, and severe infection are uncommon.

⁶ Frequently reported corrective procedures include repair of incomplete circumcision, lysis or excision of penile post-circumcision adhesions, and division of penile adhesions.