

New Policy on Circumcision—Cause for Concern

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ABBREVIATIONS. AAP, American Academy of Pediatrics; UTI, urinary tract infection; HIV, human immunodeficiency virus; STD, sexually transmitted disease; CIS, carcinoma in situ.

The negative conclusions on newborn circumcision drawn by the recent American Academy of Pediatrics (AAP) Task Force on Circumcision are misleading and contrary to the current medical evidence, including data in the body of the report itself¹ and in the references cited therein. As professionals closely involved with clinical investigations on newborn circumcision,²⁻⁷ we are compelled to express our concern about this report. The Task Force states that newborn circumcision is not recommended and that the procedure is “not essential to the child’s current well-being.”¹ The media and the public are now understandably convinced that the AAP has adopted an anticircumcision stance compared with its previous neutral position on newborn circumcision.² This attitude has not only been taken by the activist anticircumcision forces but also by the respected media: eg, “Circumcision Loses a Key Endorsement” (*Washington Post*),⁸ “Circumcision Benefits Disputed” (*Chicago Sun-Times*),⁹ “Pediatricians Turn Away From Circumcision” (*CNN*),¹⁰ and “Circumcision Opponents Energized by About-Face of Academy of Pediatrics” (*Forward*).¹¹ One would assume that in the decade since the 1989 report,² new evidence must have appeared demonstrating substantial disadvantage of newborn circumcision. However, the opposite is true.

Considerable published data from the past 10 years (much of it cited in the current report) confirm and reinforce previous evidence on the medical benefits of newborn circumcision, particularly in protecting against urinary tract infection (UTI) and human immunodeficiency virus (HIV) infection. Pain—a major disadvantage of the procedure—has been shown to be safely and effectively controlled by local anesthesia. With more proven advantages and fewer disadvantages, how could the Task Force issue

a statement that could only be interpreted as reversing previous policy and discouraging newborn circumcision?

The report of the 1989 Task Force, for which 1 of the authors (E.J.S.) was Chair,² listed definitive benefits of newborn circumcision: prevention of 3 specific conditions (penile cancer, local infection, and phimosis) and facilitation of good genital hygiene. In addition, we found credible evidence that newborn circumcision prevents UTI in the first year of life.⁴ Published articles describing a preventive effect on HIV acquisition^{12,13} were considered preliminary and not included in the report. Disadvantages listed were pain and possible infection and bleeding. In the ensuing 10 years, the protective effect of newborn circumcision on UTI in infants has been repeatedly confirmed,⁵ and worldwide epidemiologic studies have presented compelling evidence of the protective effect against HIV acquisition.⁶

Multiple studies¹⁴ comparing the prevalence of UTI in uncircumcised and circumcised male infants have shown a preponderance of UTI in uncircumcised infants. While a meta-analysis described a 12-fold increase for UTIs,¹⁴ the 1999 Task Force statement suggests the protective effect of circumcision is less (3- to 7-fold), inappropriately citing among others, the works of Shaw et al,¹⁵ Herzog,¹⁶ and Fussell et al.¹⁷ In reality, the study by Shaw et al yielded an 8-fold increased risk, the Herzog investigation demonstrated a greater than 50-fold increased risk, and the Fussell report did not even address the issue. It seems likely that the prevalence of UTI is higher than reported because it will be underdiagnosed unless urine cultures are routinely taken in evaluating febrile infants. Newman et al,¹⁸ reporting for the Pediatric Research in an Office Setting network, concluded that fewer than 50% of pediatricians performed urine culture in evaluating febrile infants <3 months old, despite the high incidence of UTI (>10%) in these infants. In a population-based study of 14 893 males born in 1996 in a closed-panel, non-profit health maintenance organization with an effective tracking system, 2.5% (1 in 40) of uncircumcised infants developed UTI within the first year of life, most before 6 months old, and were 11 times more likely to develop UTI and 18 times more likely to be hospitalized with UTI than were circumcised infants.¹⁹ The subsequent development of renal scarring indicates that UTI in infancy may not be benign.²⁰ As stated in “Information for Parents,”²¹ evidence indicates that in the first year of life

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uncircumcised infants have at least a 10-fold increased risk of UTI; a circumcised infant has approximately a 1 in 1000 chance of having UTI in the first year of life, whereas an uncircumcised infant has a 1 in 100 chance. In clinical terms, given that ~2 million boys are born each year in the United States, this 10-fold risk of UTI translates into 20 000 UTIs annually in the United States if all newborn boys are uncircumcised but only 2000 UTIs annually if all the boys are circumcised. Otherwise stated, newborn circumcision is >90% effective for preventing UTI, a preventive health benefit equivalent to the protective rate of many vaccines given to children.²² Despite this implication, however, the 10-fold relative risk for UTI in uncircumcised:circumcised is referred to as a "slightly lower risk."²¹

The inappropriately brief paragraph on sexually transmitted disease (STD) ignores much evidence accumulated in recent years regarding the effect of male circumcision on reducing risk for HIV infection and other types of STD. As noted, in a review published by one of the authors (S.M.) in 1998,⁶ the association between male circumcision and risk for HIV infection was investigated by 7 prospective studies (from 4 countries). All these studies showed a positive association between lack of male circumcision and risk for HIV acquisition, with approximately a 3-fold relative risk in uncircumcised men. The 1998 review⁶ also identified 37 cross-sectional or retrospective studies, 26 of which (from 8 countries) reported a statistically significant association between lack of male circumcision and risk for HIV infection; an additional 5 studies found a trend toward an association. Again, uncircumcised men had ~3 times the risk of acquiring HIV infection as did circumcised men.

Strong evidence also links lack of male circumcision to increased risk for genital ulcer disease, particularly chancroid and syphilis. The 1998 review⁶ identified 11 studies that showed that lack of male circumcision is associated with these types of STDs and none reporting no association or circumcision associated with an increased risk of STD. The strong association between genital ulcer disease and risk for HIV infection lends additional credence to the studies that link lack of circumcision to increased risk for HIV acquisition.²³

Of interest in this regard is the number of cases of HIV infection which could be prevented in sub-Saharan Africa by male circumcision. For example, in Uganda, Malawi, Zambia, and Zimbabwe, countries that are experiencing an advanced epidemic of HIV,²⁴ male circumcision is rarely practiced.²⁵ There are ~11.5 million males 15 to 49 years old in these countries.²⁴ A recent study from rural Uganda reported that annual incidence of HIV among adults there is ~1.5%.²⁶ Assuming, conservatively, an annual HIV incidence of 1% among men 15 to 49 years old, 114 820 new HIV infections annually would develop. If male circumcision reduces risk for HIV acquisition among men 3-fold, as suggested by evidence from prospective studies,⁶ then >76 000 new HIV infections would be prevented annually by universal male circumcision in the 4 countries. Even if

risk were reduced by only one half—the lower limit of confidence intervals from prospective studies—HIV infections would be prevented annually in >57 000 men, clearly a major impact.

The report of the Task Force comments that behavioral factors in acquisition of HIV infection seem to be more important risk factors than circumcision status. Although this statement may be true, behavior is difficult to change,⁷ and an effective intervention to prevent HIV infection (eg, circumcision) should not be discounted because it may have less impact than behavioral change. Such reasoning is analogous to not recommending exercise and a prudent diet to prevent atherosclerotic heart disease because stopping cigarette smoking is more important.

The previously documented,² overwhelming protection of circumcision against penile cancer is understated in the AAP report. A subsequent study²⁷ indicating only a 3-fold greater risk of penile cancer in uncircumcised men unjustifiably combined lethal invasive penile cancer with carcinoma in situ (CIS) in the analysis, as pointed out in a concurrent editorial.²⁸ One of the authors (E.J.S.) recently co-authored an analysis of 213 cases (122 CIS, 91 invasive cancer) in a large health maintenance organization²⁹ that reported that although the relative risk of CIS developing in uncircumcised men was only 3-fold that in circumcised men—a finding similar to that reported in the study by Maden et al²⁷—uncircumcised men had 22 times the risk of having invasive cancer as did circumcised men. Approximately 1200 cases of invasive penile cancer are reported annually in the United States (a prevalence of <1 in 100 000, as noted in the report), but these cases are clustered among the 30% of US men who are uncircumcised. If all US men were uncircumcised, cases of invasive penile cancer could be expected to triple in number to >3000 cases annually using the conservatively estimated increased risk in the Task Force report. Invasive penile cancer is a lethal disease with a 5-year survival rate worse than that of female breast cancer³⁰—and has a similarly devastating physical and emotional impact, because treatment often involves penectomy. Our data²⁹ confirm findings of multiple previous studies (cited in reference 2) that indicate that invasive penile cancer could be virtually eliminated in the United States by routine newborn circumcision.

The section on embryology and anatomy of the foreskin ignores evidence that properties of the foreskin predispose it to UTI and HIV infection. Uncircumcised male infants often show penile bacterial colonization^{17,31–33} and uropathic bacteria, particularly fimbriated *Escherichia coli* (the most common cause of UTI) preferentially bind to the mucosal surface of the foreskin.^{17,32,33} Bacterial colonization results in frequent contamination of voided urine in uncircumcised boys,^{34,35} and this result necessitates use of more invasive procedures (eg, catheterization, bladder tap) to obtain a valid urine specimen from boys whose foreskin is present. Also, virally infected Langerhans cells found in the foreskin³⁶ have been implicated in binding HIV, a possible biologic explanation for the increased prevalence of HIV and other

STD in uncircumcised men,³⁷ in addition to increased propensity of the delicate foreskin mucosa to tear during intercourse providing a portal of entry for HIV.

The confusion engendered by the Task Force report could have serious consequences on the credibility of the AAP and could place individual pediatricians in medicolegal jeopardy, especially if an uncircumcised infant were to be hospitalized with severe UTI after the pediatrician had cited the 1999 Task Force report when advising against circumcision.

The simultaneously published brochure of the AAP, "Information for Parents,"²¹ contradicts the stated aim of "evidence-based" decisions by listing 2 anecdotal "beliefs" as reasons not to circumcise. The 6 preventive health reasons listed in favor of choosing circumcision are evidence-based and well documented, except for understating the protection against UTI and HIV. These 6 documented benefits are balanced by only 1 evidence-based reason not to choose circumcision: the possible complications of surgery, which are correctly characterized as "rare and usually minor." A prudent observer could conclude only that the preventive health benefits of newborn circumcision far outweigh the risks. In an apparent effort to bolster the weak anticircumcision argument, 2 anecdotal beliefs are added to the listed reasons not to choose circumcision: the "protective benefit" of the foreskin on the tip of the penis and the belief that circumcision causes decreased sexual pleasure later in life. Neither of these anecdotal beliefs meets the stated criterion of being evidence-based. On the contrary, in the case of sexual pleasure, surveys indicate that women prefer sex with circumcised men, primarily from the standpoint of cleanliness and appearance,³⁸ and the Task Force cites evidence³⁹ that circumcised adult men have more varied sexual practice and less sexual dysfunction.

Converting the substantial medical evidence favoring newborn circumcision into a statement discouraging the procedure, citing anecdotal beliefs as reasons not to choose circumcision, referring to proven medical benefits as "potential," trivializing as "slight" relative risk values of 10-fold and using jargon favored by organized groups opposing circumcision (eg, groups who refer to foreskin removal as "amputation")—all these suggest an anticircumcision bias by the 1999 Task Force. Pertinent to this bias is the fact that an outspoken anticircumcision pediatrician was invited to address the Task Force early in its deliberations and has referred to himself as a "consultant to the American Academy of Pediatrics Task Force on Circumcision"⁴⁰ although he is not so listed in the report. Further, by referring to circumcision as "not essential to the child's current well-being," the Task Force seems to be arguing against other preventive health measures, such as routine immunization, preventive dental care, and nutrition aimed at future health, none of which are essential to current well-being. What about the child's future well-being, a key aspect of pediatric practice? If physicians were limited to treating only those conditions essential to current well-being, we would only pro-

vide care for acute and chronic illness, taking us back to nineteenth century medicine on the eve of the 21st century. The Task Force has ignored much of the medical evidence confirming the lifelong preventive health benefits of newborn circumcision, particularly in older boys and men.

The newborn period is optimal for circumcision. At this time the procedure is quick, safe, economical, and has maximal medical effectiveness. UTI in uncircumcised males has the greatest prevalence and severity in the first year of life particularly before 6 months old.^{4,5,19} It has been known for over 60 years that newborn circumcision virtually eliminates invasive penile cancer later in life, but circumcision performed at older ages is less protective.^{41,42} Recently Kelly et al⁴³ found that men who were circumcised before 12 years old had a much reduced risk of acquiring HIV infection, but this protective effect decreased if circumcision was performed postpubertally.

The medical benefits of circumcision are proven by peer-reviewed, evidence-based studies and are not just "potential" as claimed by the Task Force. Currently in the United States newborn circumcision prevents thousands of cases annually of UTI, penile cancer, HIV, and certain other STDs, as well as balanoposthitis and phimosis. Ease of genital hygiene is another real advantage. In addition to these proven preventive health effects, there are "potential" benefits including the possibility, raised by radiographic evidence of renal damage after UTI²⁰ that by preventing UTI in infancy, later hypertension and chronic renal disease might be avoided. In the case of HIV, the African evidence suggests that as heterosexual HIV increases in the United States, newborn circumcision could play a larger role in HIV prevention in the future. The Task Force does not consider these multiple benefits of newborn circumcision, proven and potential, to be "sufficient" to recommend the procedure, but it does not explain how much evidence would be "sufficient." The public and the profession would be better served had the Task Force simply listed all the evidence-based advantages and disadvantages of newborn circumcision. The physician would then be free to counsel the family in an objective, nonjudgmental manner.

A possible explanation for the misleading conclusions of the report may lie in the unique protective benefits of newborn circumcision, which cross interdisciplinary boundaries. With immunization, for instance, a single antigen protects against a single disease; and because polio vaccine prevents polio primarily in children, vaccination against polio is included in the pediatric domain. In contrast, because newborn circumcision prevents UTI primarily in infancy, prevents STD in young men, and prevents penile cancer in middle-aged and older men, the procedure involves many disciplines: internal medicine, urology, geriatrics, infectious disease, and oncology. Interdisciplinary imbalance is illustrated in the Task Force report by comparing the length of the section on UTI in infancy (considered pediatric territory) with the brief and inadequate analyses of HIV and penile cancer in men. Nonetheless, pediatricians

are the gatekeepers, controlling circumcision at a time in the newborn's life when the procedure can be performed most easily and with the greatest benefit and least risk. Jurisdictional frustration was clearly expressed in 1973 by Dagher et al,⁴⁴ who, after reviewing invasive penile cancer in 156 men, all uncircumcised, reported: "Despite overwhelming evidence from urological surgeons that neoplasm of the penis is a lethal disease that can be prevented by removal of the foreskin, some physicians continue to argue against routine circumcision in a highly emotional and aggressive fashion." And this statement was made before we knew about HIV and UTI! By ignoring important medical evidence and discouraging newborn circumcision, the AAP Task Force is placing infant boys at increased risk for appreciable illness throughout life.

We believe that the leadership of the AAP should quickly address the narrow, biased, and inadequate data analysis as well as the inappropriate conclusions of both the Task Force report¹ and its related "Information for Parents."²¹ Objective, evidence-based health choices for patients and the credibility of the AAP and its membership are at stake.

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