

Alleged Medical Benefits of Circumcision

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*The old dictum that ‘if it ain’t broke, don’t fix it’ seems to make good sense...
Submitting your son to the procedure to prevent urinary tract infections makes
only a little more sense than buying insurance against being gored by a unicorn...*

– Eugene Robin, M.D.

Introduction

Almost all human beings, male, female, and intersex, are born with a foreskin, or [prepuce](#). In girls it covers the glans (head) of the clitoris; in boys it covers the glans of the penis. Since this is a normal, healthy anatomical structure, there are no medical indications for amputating or excising it in the newborn period, and rarely in infancy or childhood. This is the view of all child health authorities that have issued [policy statements](#) on this question. In the absence of any medical indication, the Council on Scientific Affairs of the American Medical Association (AMA) has properly described elective infant circumcision as a “non-therapeutic” procedure.[1]

Circumcision of infants is a painful and stressful procedure that often leaves the boy exhausted, and unable to sleep properly[2,3] or to breastfeed.[4] Thus, though a non-therapeutic circumcision is unnecessary in the first place, medical authorities state that elective circumcision should be performed only on healthy and medically stable infants.[5]

The health benefits claimed are reduced risk of contracting certain uncommon and/or easily treatable diseases or conditions to which a boy may be exposed in later life, including:

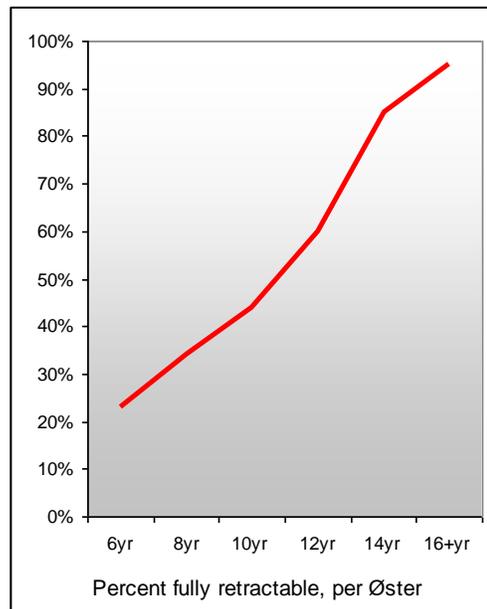
- phimosis
- balanitis
- sexually transmitted infections (STIs)
- urinary tract infections (UTIs)
- cancer of the penis
- prostate cancer, and
- cervical cancer in female partners

These claims date originally from before the advent of evidence-based medicine, when doctors relied on the opinions of other clinicians to inform their practice, rather than on scientifically collected evidence (e.g.[6]). We shall examine each of these claims in turn.

Phimosis

The term phimosis loosely describes the condition in which the foreskin cannot be drawn back (retracted) to uncover the glans (head) of the penis. Unfortunately, the term has been misused for over 100 years, and inappropriately used as an excuse for circumcision. It has been used to refer to both a normal, physiological, developmental stage in children, and as well as to a pathological condition, usually of adults, but rarely found in children. The former requires no treatment whatsoever, and the latter can be typically be prevented by proper care and/or treated conservatively. It is important to distinguish between these two meanings.

Normal physiological non-retractability - At birth, the foreskin is usually fused to the glans (head) of the penis, and so cannot be retracted. A non-retractable foreskin in itself is *not* a disease but a physiologically **normal developmental stage** in boys. There is no set age by which a boy “must” be retractable. The foreskin gradually becomes retractable, all by itself, between infancy and early adulthood.[7] About 50% of boys are able to fully retract their foreskin by 10 years of age, and only about 1 percent of males aged 18-plus have a non-retractile foreskin.[8,9] In the absence of tissue changes indicating a disease process, a diagnosis of “phimosis” in a pathological sense is inappropriate for most children and adolescents.



Physiological non-retractability requires no treatment. The fusion of the foreskin with the glans penis naturally dissolves gradually over time (along with accompanying loosening of the foreskin outlet) without any need for intervention. Occasional spraying of urine, or the presence of ballooning upon urination, are typically harmless, transitory phenomena sometimes seen during the developmental process.[10] Even those few men who retain a non-retractable foreskin into adulthood may never have any problems with hygiene, comfort, or sexual performance.

Pathological and problem phimosis. Pathological phimosis is rare; one large study found the cumulative risk to be 0.6% by age 15 years.[11] Most cases are likely caused by **forced retraction** of the foreskin in childhood (often by health professionals, or by parents following improper medical advice) that causes tears, resulting in scarring and adhesion of the foreskin to the glans as the tissue heals.

Phimosis can also be the result of a rare condition called **balanitis xerotica obliterans (BXO)**, in which disease processes harden the tissue of the foreskin outlet. Since BXO may be a precursor to squamous cell carcinoma (a cancer of the skin and internal linings),[12] this may in part explain the observed association of penile cancer with a history of phimosis.[13]

When treatment is deemed necessary, for example, if the foreskin is too tight to allow for urination, 80% to 95% of cases can be successfully treated by application of topical steroid ointment which avoids surgical risk.[14,15] Older boys and men may treat a non-retractable foreskin with gentle manual stretching to accomplish permanent tissue expansion.[16,17] With the development of [conservative treatments](#), including topical therapies and foreskin-sparing surgical techniques,[18,19] the use of circumcision as a treatment of choice to prevent or relieve phimosis is obsolete.

Phimosis can occasionally be caused by a condition called *frenulum breve* in which the frenulum (the web of tissue connecting the foreskin to the underside of the glans) is too short to allow retraction. *Frenulum breve* may be relieved by a minor incision in the frenulum (frenuloplasty).[20]

Infant circumcision itself can actually cause a phimotic condition, as the circular scar may contract over the top of the glans following surgery, trapping it behind a ring of scar tissue. One study found that phimosis occurs in 2.9% of circumcision patients[21] – a figure that easily exceeds the incidence of pathological phimosis in intact males.[11] Since circumcision may cause more cases of phimosis than it prevents, it cannot be recommended to prevent phimosis.

Balanitis

Intact males may sometimes present with balanitis – a catch-all term covering various minor inflammatory problems affecting the foreskin and/or glans. Balanitis can be caused by mechanical or chemical irritation (e.g. from soiled diapers, soap, or harsh pool chemicals), or by infection with bacteria or fungi. It is rarely an indication for therapeutic circumcision, and never for prophylactic circumcision. Effective [conservative treatment](#) measures exist for all types of balanitis, including BXO, and are considered the first line of treatment.[12]

Urinary Tract Infections (UTIs)

Among the few alleged benefits of circumcision that are of actual relevance to children, the most prominent is the claim that it protects against urinary tract infections in the first year of life. The degree of *relative* risk reduction for circumcised boys is most often reported as 10-fold (over a small absolute incidence), based on retrospective data.[22] However, a large prospective cohort study – a more reliable research design – reported a relative risk reduction in hospitalization for UTI of 3.7-fold.[23] Furthermore, in this study, when all outpatient UTIs were considered, the relative risk reduction dropped to 1.73-fold.[23]

To put UTIs into perspective, a study from Sweden, where boys are not circumcised, found that, over the first six years of life, the *absolute* risk of UTIs in boys was low, at 1.8% versus 6.6% in girls, and that UTI infection in boys was rare after the first year of life (0.1 -0.2%).[24] Another investigator found a UTI rate of 0.08% in males >1 year old.[25] When UTIs do occur, they respond rapidly to antibiotic therapy.[26-28] UTIs in the first months of life are less likely to

involve the kidneys,[29] and UTIs rarely, if ever, result in hypertension or end-stage kidney disease.[30-37]

Nonetheless, UTIs have been touted as a “compelling” reason for circumcision largely due to the efforts of Thomas Wiswell who, beginning in 1982, searched U.S. Army hospital databases to compare UTI rates in circumcised and intact infant males.[38, and others] The American Academy of Pediatrics itself critiqued the spate of studies produced by Wiswell and other investigators around the same time, stating,

It should be noted that these studies were retrospective in design and may have methodological flaws. For example, they do not include all boys born in any single cohort or those treated as outpatients, so the study population may have been influenced by selection bias.[39]

In addition, these studies failed to control for potentially confounding factors, such as being born prematurely. Prematurity puts babies at higher risk of infections of all kinds due to their immature immune systems, and such infants are more likely to undergo catheterization for various reasons, in itself increasing the infection risk. However, premature babies are also typically not circumcised because of their fragile medical condition, thus prematurity itself (rather than the presence of a foreskin) could explain the higher rate of UTIs found in intact infants.

There are no studies on circumcision and UTI that have adjusted for the various possible confounding factors. One statistical analysis modeled the impact of confounders on rates of diagnosis of UTIs, starting from the hypothetical assumption of no actual difference in UTIs between circumcised and intact boys.[40] Documented confounders accounted for in the model included prematurity, method of urine collection (the commonly used bag method produces more false positives in intact boys), differential health-seeking behavior (parents of prematurely born [thus more often intact] babies, and of typically non-circumcised Hispanic boys, have been shown to disproportionately seek medical care for minor medical problems), and differential rates of UTI testing of intact boys (due to clinicians’ assumptions of their increased risk), among others. The model determined that, if there were no real difference in the rate of UTIs, intact boys would be diagnosed with a UTI 4.27 times more often than circumcised boys due to such confounding factors alone. The author concluded that “it is quite possible that the differences noted in the incidence of urinary tract infection between circumcised and non-circumcised boys are entirely due to confounding factors.”[40]

In particular, no study has ever adjusted for the effect of forcible foreskin retraction, a common injury that was once standard medical ‘care’ based on North American clinicians’ lack of understanding of normal foreskin development.[41,42] Although the American Academy of Pediatrics has recommended against the practice of forced foreskin retraction for decades, it persists both in clinical settings and at home by parents, due to erroneous and aggressive hygiene advice. Traumatic retraction is invariably performed without any antisepsis, putting intact boys at risk of iatrogenic (doctor-caused) UTI, and potentially biasing studies of UTI incidence.

On the other hand, a number of other studies have failed to find a UTI risk-reduction effect from circumcision.

For example, eight studies from Israel demonstrated, in fact, the opposite: a positive association between ritual circumcision on the eighth day and immediate post-circumcision UTI.[43-50]

Mueller et al. conducted in a prospective study of 108 male infants under 6 months of age with UTI.[51] They found that, regardless of circumcision status, infants who presented with their first UTI at 6 months or less were likely to have an underlying GU abnormality (~75%), mostly vesicoureteral reflux (backward flow of urine from the bladder to the kidneys, which can carry pathogens upstream in the urinary tract), and that in the remaining boys with UTI who had normal anatomy, circumcised and intact boys were equally represented. Thus, the presence of anatomical abnormalities, not the foreskin, was found to be the predominant associated risk factor of the UTIs.

Kwak et al. studied whether circumcision during surgery to correct vesicoureteral reflux made a difference in the incidence of post-operative UTI.[52] Over 12 years of follow-up, the authors found no difference in number of post-operative UTI episodes between boys circumcised during antireflux surgery and those that were not. Again, the presence of the foreskin was not a factor.

Even if the earlier studies are accurate, it is estimated that between 111 and 195 circumcisions would be needed to prevent one urinary tract infection.[22,23] Since circumcisions cost at least \$285 each,[53] it would be necessary to spend between \$31,635 and \$55,575 to prevent a single infection with no long-term consequences, and that infection can easily be treated with an oral antibiotic that costs less than \$20. It has been estimated that only one boy in 6000 will legitimately require a circumcision related to difficulties from UTIs.[54]

The evidence suggests that circumcision is, at best, of little value in reducing UTI. Risks, complications, and disadvantages of circumcision outweigh any reduction in UTI.[55-57] Breastfeeding has a protective effect against infection in infancy, including UTI,[58-61] an effect that continues even after weaning.[58,59] Instead of circumcision, breastfeeding[62,63] and rooming-in (to colonize the infant with maternal bacteria)[64] are recommended to reduce UTI in infancy.

Sexually Transmitted Infections (STIs)

Despite the fact that infants and children are not sexually active and thus not at risk for any sexually transmitted infection (STI) (and that adults can take appropriate precautions), the idea that circumcision significantly reduces the risk of STIs is a rationale commonly given for the practice. However, this notion is a piece of medical folklore dating back to Victorian-era medicine, before a modern understanding of the causes of disease and before the advent of evidence-based medicine.[65]

In the 1910s, an article was published in the Journal of the American Medical Association criticizing ritual circumcision because of the number of cases of tuberculosis acquired through

the open wound.[66] In response, physician Abraham Wolbarst published a defensive reply in which he cited the prevention of ‘venereal disease’ (along with prevention of masturbation and many other problems) to justify his call for “universal circumcision as a sanitary measure.”[6]

However, modern science has not confirmed Wolbarst’s claims. Since his time, dozens of studies have sought to determine whether circumcision makes a meaningful difference in the risk of STI acquisition, with inconsistent and contradictory results.

When the results of STI studies are considered in aggregate using meta-analysis, circumcision has been shown to have *no significant impact* on the risk of gonorrhea,[67,68] chlamydia,[67,68] genital herpes simplex virus infections,[68] human papilloma virus (HPV),[68] or chancroid.[67,68] Being circumcised is associated with an *increased risk* of non-specific urethritis,[67,68] genital discharge syndrome (which includes gonorrhea, chlamydia, and non-specific urethritis),[67,68] and an increased risk of contracting any STI (as opposed to having no STIs).[68] Being circumcised is associated with a *slightly lowered risk* of genital ulcerative disease (which includes chancroid, syphilis, and genital herpes infection)[67-69] and syphilis (primarily in Africa).[68,69] However, prospective studies have found a *slight increase* in the incidence of syphilis in circumcised males.[70,71]

In the case of HPV, sampling bias can occur if only the glans of the penis is tested. Several studies have shown that circumcised men are more likely than intact men to harbor the HPV virus on the shaft of the penis as compared to the glans.[72-77] As a result, sampling only the glans will miss more HPV infections in circumcised men than it will in intact men, thus overestimating the association between having a foreskin and genital HPV.[68,78] For example, several recent HPV studies from Africa only sampled the glans.[79,80] When adjusted for sampling bias, the results of these studies were no longer statistically significant.[81,82]

There is no evidence that circumcision has reduced the incidence of STIs in the United States. While the prevalence of chlamydia, gonorrhea and syphilis has declined steadily in (non-circumcising) Europe since 1980, in the (circumcising) U.S., the incidence of syphilis has increased, and the incidence of chlamydia has soared.[83] The incidence of gonorrhea in the U.S. is 20 times higher than in Europe, while the incidence of chlamydia in the U.S. is 45 times higher than in Europe.[83] A recent study of men visiting public STI clinics found that circumcised men were less likely than intact men to use condoms, which may in part explain these STI trends.[84]

The medical evidence does not support the practice of neonatal circumcision to prevent sexually transmitted infections. In fact, the evidence indicates that circumcision may actually increase the overall risk of STIs. Even if circumcision did reduce the risk of STIs, pre-emptive amputation is not a preferred approach to diseases that can readily be cured with a short course of antibiotics, or prevented by simple safe-sex behaviors. An adult male can choose to have his foreskin removed, if he prefers, but it is neither medically reasonable nor ethically acceptable to force this choice on not-at-risk children.

HIV/AIDS

While prevention of sexually transmitted infections is irrelevant to non-sexually-active newborns and children, nonetheless, prevention of human immunodeficiency virus (HIV) has become one of the main ‘medical benefits’ rationales given for circumcision.[5]

A decade ago, three randomized controlled trials (RCTs) done in sub-Saharan Africa appeared to show, during the study period, a 38-66% relative reduction for the circumcised subjects in the risk of heterosexual, female to male only, transmission of HIV.[85-87] All three studies were terminated early, due to their apparently clear results. However, Dowsett and Couch examined the results of the three RCTs, but found insufficient evidence to recommend circumcision to prevent HIV infection.[88] Green et al. reviewed the evidence and also found “insufficient data” as well as contrary evidence.[89,90]

While RCTs are often considered the gold standard of medical trials, this only applies to RCTs with study designs that minimize bias. The three African RCTs were very similar in study design and contained multiple sources of bias, outlined below[89-92]:

- Researcher expectation bias – Many of the investigators had written papers advocating for male circumcision to prevent HIV infection *prior* to undertaking these RCTs. Siegfried et al. note, on the topic of research on circumcision to prevent HIV, that “researchers’ personal biases and the dominant circumcision practices of their respective countries may influence their interpretation of findings.”[93]
- Participant expectation bias – The majority of participants were convinced that circumcision would reduce their risk of HIV infection.[94]
- Lead time bias – Men randomized to the intervention arm of the trials (the group that was circumcised) were considered to be at risk for becoming infected from the time of the surgery, even though they were told to avoid sexual activity during the period of wound healing. Men in the control arm (the ones who were not circumcised) were able to be sexually active from the beginning of the study.
- Selection bias – Only men who were interested in a free circumcision were eligible to participate, and therefore may not have been representative of the general population.
- Attrition bias – For every man who became infected with HIV during the trials, 3.5–7.4 men were lost to follow-up. This is a serious methodological problem that could alter the statistical significance of the findings.[95]
- Early termination bias – Studies that are terminated early are more likely to overestimate any treatment effect.[96,97]
- Duration bias – Because men who were not initially circumcised were circumcised at the end of the study, long-term comparison of the effects cannot be accurately extrapolated, as some modelers have proposed.[98]

- Source of infection unknown – If the studies were designed to determine whether circumcision reduced the risk of heterosexually-transmitted HIV, the investigators should have confirmed that the infections were indeed transmitted through heterosexual sexual contact. They did not. Using the data reported, it is estimated that about half of the infections of the men in these studies were *not* sexually transmitted.[92]

The cumulative treatment effect in these trials – which claimed a 38-66% *relative* risk reduction[99] – was an *absolute* risk reduction of 1.3%.[91] This is a very small effect, which could easily have resulted from the various forms of bias, rather than being a true treatment effect. The findings are not robust, given that all of the trials had nearly identical methodologies and nearly identical results.

In any case, it appears that these trials were unnecessary in the first place. Data released before the trials began found a number of African countries where the prevalence of HIV infection was *greater in circumcised men* than in intact men.[100,101]

Unfortunately, the results from the three RCTs provided the impetus for the WHO to bypass the usual step of performing pilot studies to determine if circumcision was effective outside of a research setting. Instead, it recommended programs to circumcise millions of men in sub-Saharan Africa as quickly as possible. (These programs measure success by the number of males circumcised rather than by their impact on HIV incidence. Since the mass circumcision campaigns began in Uganda and Kenya, the incidence of new cases of HIV in both countries has increased.[102-104]) The WHO recommendations included that circumcision programs should be voluntary, free of coercion, and targeted to areas where the HIV prevalence is high (>15% of the population) and circumcision rates are low (<20%).[105] None of these criteria apply to the situation of newborn babies (who cannot voluntarily consent) in the epidemiological setting of the United States (low HIV prevalence, and already high circumcision rate, as well as a much higher standard of living than Africa).

As with other STIs, there is no evidence that circumcision has had any impact on lowering the incidence of HIV infection in the United States. Of the eight HIV studies in North American heterosexual men,[100,106-112] only one has found a significant association between circumcision and HIV infection risk: it actually found that circumcised men were at *greater risk* of HIV infection.[112] Furthermore, the HIV epidemic in the United States is concentrated among men who have sex with men (MSM) and injecting drug users. A meta-analysis of the studies published on this topic by the Centers for Disease Control and Prevention (CDC) found that the risk for HIV infection in MSM is the same in intact and circumcised men.[113] A subsequent study yielded similar results.[114]

While some authors have theorized that Langerhans cells present in the foreskin are a significant portal for HIV infection, and have used this as a rationale for circumcision as a preventative,[115] evidence now shows that these cells produce a protein, langerin, that is actually protective against the virus.[116] The authors of the langerin study argue that “strategies to combat [HIV] infection must enhance, preserve or, at the very least, not interfere with langerin expression and function [in the Langerhans cells of the foreskin].”[116]

RCTs carried out among adults in Africa are not relevant to children anywhere, since children are not sexually active and are therefore not at risk of HIV infection by sexual transmission. For adults, condoms are an effective means of preventing sexually transmitted infections, including HIV.[117] Other preventative interventions, such as “treatment as prevention” and pre-exposure prophylaxis, are more effective, less expensive, and less injurious than circumcision.[118,119]

Cancer of the Penis

American physician Abraham Wolbarst was also responsible for promoting the erroneous notion that circumcised men were immune to cancer of the penis. His opinion piece published in the *Lancet* in 1932[120] – a time when the causes of cancer were not understood – has been erroneously cited as fact ever since.

It was not long, however, before doctors started to report cases of cancer in circumcised men.[121] Maden et al. studied a population of 110 men with penile cancer, and found that 41 cases were in circumcised men.[122] Despite these cases, the researchers claimed that not being circumcised was a risk factor for penile cancer.[122] However, when Maden’s data were properly adjusted for age, there was no difference in the risk for circumcised and non-circumcised men.[123]

Two subsequent case-control studies found that being diagnosed with pathological phimosis was an important risk factor for penile cancer.[16,119] When the data were controlled for phimosis, not having been circumcised as an infant was *not* a significant risk factor. Other risk factors include genital warts/HPV infection, tobacco use, and an increased number of lifetime sex partners.[122,124,125]

DNA from human papillomavirus (HPV, which is contracted by sexual contact) has been identified in penile cancer cells in about half the cases of penile cancer, so these infections are an important risk factor.[125,126] Half of penile cancers may be linked to balanitis xerotica obliterans (BXO), which is increasingly being identified as a precancerous condition, and whose cause is not fully understood.[12,127,128]

Based on numbers provided in the 2012 American Academy of Pediatrics Circumcision Task Force report,[5] the number of circumcisions needed to prevent one case of penile cancer is between 4237 and 7184. With the average reimbursement for infant circumcision being \$285 paid at the time of the procedure,[53] the cost at the time of the procedure would be between \$1.21 million and \$2.01 million. But this is not the true cost, because the opportunity costs of not having the money available for the 80 years before penile cancer usually occurs has not been considered. Typically the opportunity costs are between 3% and 5% per annum. With this taken into account, using circumcision to prevent one case of penile cancer would cost between \$12.85 million and \$101.47 million.

Cancer of the penis is a rare disease of elderly men (occurring in the U.S. in less than 1 in 100,000 men,[129] with an average age of diagnosis of 68 years[130]). Breast cancer is actually

more common in men than cancer of the penis.[131]) To prevent penile cancer, the American Cancer Society does not recommend circumcision for all males, rather it recommends avoiding exposure to HPV and HIV, not smoking, and good genital hygiene.[132]

Prostate Cancer

The best-established correlates of prostate cancer are advancing age, a family history of prostate cancer, and African ancestry.[133,134] Claims that circumcision is protective against prostate cancer have been made and subsequently refuted in the medical literature since 1942.[e.g.135] Two recent studies received wide media attention, yet their results are not compelling.[136,137] These two studies are discussed below.

In a large case-control study from Washington State, Wright et al. found that, overall, circumcision status was not associated with the presence of prostate cancer.[136] In this study, men circumcised after first sexual intercourse actually had a slightly higher (though non-statistically-significant) rate of prostate cancer than never-circumcised men. Only by combining this group (with its higher risk rate) with the never-circumcised men, were the investigators barely able to reach statistical significance, claiming a small relative risk reduction of 15% for the remaining men who had been circumcised before sexual debut.

Spence et al., using a similar case-control design with a large population in Canada, also found no overall association of circumcision status with prostate cancer rates.[137] When stratifying the results by racial ancestry, the investigators found a reduced rate only for Black men, but not for any other racial groups. Contrary to Wright et al., Spence et al. found a reduced rate of prostate cancer in men circumcised after the age of 35, but no significant difference for any other age group. Both groups of investigators assumed that the control group (men who had never been diagnosed with prostate cancer) did not actually have prostate cancer. In fact, however, prostate cancer has been shown to be present upon autopsy in one-third of undiagnosed men,[138] a factor which could negate any of the above results.

Both of these studies were based on several tenuous assumptions. The first assumption is that the risk of prostate cancer is increased by sexually transmitted infections. However, the medical literature is mixed on this point. For example, some populations at low risk for STIs (e.g. Catholic priests) have shown a greater risk for prostate cancer compared to the general population,[139] while others at high risk for STIs (e.g. men with HIV) have decreased rates of prostate cancer.[140] Neither Wright et al. nor Spence et al. found any significant association between prostate cancer and a history of STIs, undermining their own working hypotheses.[136,137] The second assumption is that genitally intact men are at higher risk for STI. As seen above, the literature does not support this contention. Instead the literature indicates that circumcised men are at an overall greater risk of STIs.[68]

If circumcision were actually to reduce the risk of prostate cancer, one would expect rates to have dropped in correlation to the rise in circumcision rates in the U.S. during the 20th century. In fact, the opposite has occurred.[141] Likewise, one would expect to see an elevated incidence in non-circumcising Europe, compared to the circumcising U.S., and again, this has not been

demonstrated.[142] Finally, no association has been demonstrated between PSA levels (an indicator of likely prostate cancer) and circumcision status.[143]

Cervical Cancer

It is now known that the primary risk factor for cancer of the cervix is infection with human papilloma virus (HPV).[144] Only a handful of the hundred or so types of HPV are carcinogenic, with HPV 16 and HPV 18 associated with 70% of cervical cancers.[145] Behavioral risks such as age at sexual debut, the number of partners, and partners' sexual behavior are associated with an increased risk of HPV infection.[146,147] Smoking is an important co-factor.[148]

The HIM (HPV Infection in Men) study showed that HPV is just as prevalent in circumcised as in intact males.[149] In this study, intact males showed faster clearance of the oncogenic (cancer-causing) HPV strains than did circumcised males, which could correlate to decreased transmission of oncogenic HPV from intact males to females.

There is no clear evidence that male circumcision decreases the risk of HPV infection in female partners, as studies have produced conflicting results. In a study of female university students in Washington State, circumcision status of the male partner was not associated with incident HPV infection over a mean follow-up time of 41 months.[150] A subsequent study, carried out in Uganda in conjunction with the HIV RCTs, found a lower rate of "high-risk" HPV strains, at 24 months, in women whose partners were circumcised at the beginning of the trial versus those whose partners had not been circumcised.[151] Although cervical cancer was not tracked as an outcome, this study has been used to support the claims of circumcision as a preventative for cervical cancer. The Ugandan HPV study suffers from numerous methodological flaws.[152] As with the [HIV trials](#), these include lead-time bias and a high rate of loss to follow-up. The vaginal swabs analyzed were self-collected, a sub-standard technique potentially increasing rates of false positives and false negatives. Most tellingly, the study found no association between the male partner's circumcision status and the presence of HPV types 16 and 18, the ones most likely to cause cervical cancer.

Sixteen studies have attempted to demonstrate a connection between cervical cancer in women and the circumcision status of their male sexual partners; all of them have failed.[153-168] One of these, by Castellsagué et al.,[153] has been repeatedly cited as proof of the connection between circumcision status and cervical cancer. Yet, in fact, the study was unable to show a significant association, except in a small subset of women who had partners with high-risk sexual behaviors. Again, serious methodological problems were present, with inappropriate design elements and analysis (described [elsewhere](#) [78,152]), further undermining the results.

Given all of the above, it is safe to say that cervical cancer has no appreciable link to male circumcision status. Furthermore, safe and effective vaccines are now available for adolescent and young adult females and males to help protect against HPV and, subsequently, cervical cancer in women, and various other cancers in men.[169] But even if the claims about the presence of the foreskin causing cervical cancer were true, it would be ethically and legally

impermissible to circumcise non-consenting minors on this account, because the person bearing the risk would not be the person receiving the benefit.[170,171]

American Academy of Pediatrics 2012 policy

In 2012, the Academy of Pediatrics (AAP) reviewed the many current claims of benefit for circumcision and published a position statement that concluded that “the health benefits outweigh the risks.”[172] However, in this same statement, they admitted no less than four times that the rates of complication, morbidity, and mortality are unknown.[172, p. e772, e775]

Indeed, in a follow-up editorial published in *Pediatrics*, in May 2016, Andrew Freedman, a member of the AAP’s 2012 Circumcision Task Force, referring to the literature review his committee undertook, conceded that “[d]ifficulties with this approach included the lack of a universally accepted metric to accurately measure or balance the risks and benefits. In particular, there was insufficient information about the actual incidence and burden of non-acute complications.”[173]

It is astonishing that, given such an admission, a leading professional organization would declare *any* net benefit for an amputative procedure upon children, a failing for which the AAP has been soundly – and rightfully – criticized.[174]

A possible explanation is found in Freedman’s further admissions[173]:

- that the practice is “cultural” and “non-therapeutic,”
- that “for the most part, parents [in “the West”] choose what they want for a wide variety of nonmedical reasons,” including “religion, culture, [parental] aesthetic preference, familial identity [i.e. to make the son match father or brothers], and personal experience,” and
- ***that part of the goal of task force was to protect the parental option to circumcise a child for any such reasons, irrespective of medical factors.***

Tellingly, Freedman also states that while, as physicians, “we claim authority in the medical realm, we have no standing to judge on these other [cultural] elements”[173] – though, as he himself admitted (above), that is exactly what the Task Force did.

The tortuous 150-year-old history of spurious protective or curative claims for male circumcision has involved scores of ‘diseases’ as diverse as bedwetting, hip dysplasia, and tuberculosis. Because of this history, the many individual claims have often been packaged together to create the illusion that benefits, even if individually minor, at least provide cumulative protection. Medical professionals striving for modern evidence-based (and ethical) medical practices, however, could fairly conclude that many of the current benefit claims for circumcision are, indeed, window dressing to disguise ‘cultural brokerage’[175], rather than good science.

Conclusion

The claims of potential benefits allegedly provided by medically unnecessary, non-therapeutic infant circumcision lack any real support from evidence-based science. In each of these instances, there are [alternatives to circumcision](#) that are more effective, less expensive, and less injurious.

References

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