

# Tye & Sardi's Psychological, Psychosocial, and Psychosexual Aspects of Penile Circumcision\*

Stefan A. Bailis<sup>1</sup>, Stephen Moreton<sup>2</sup>, John N. Krieger<sup>3</sup>, Brian J. Morris<sup>4</sup>

<sup>1</sup>Cornerstone Therapy & Recovery Center, St. Paul, Minnesota, USA

<sup>2</sup>CircFacts, Warrington, UK

<sup>3</sup>Department of Urology, University of Washington School of Medicine, Seattle, USA

<sup>4</sup>School of Medical Sciences, University of Sydney, Sydney, Australia

Email: [brian.morris@sydney.edu.au](mailto:brian.morris@sydney.edu.au)

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## Abstract

Tye and Sardi recently reviewed the evidence purporting to implicate male circumcision, especially when performed early in infancy, in psychological problems in men. Here we provide a critical evaluation to determine the veracity of their evidence and claims. Missing from their review were critiques pointing out fundamental flaws in key studies. We argue that psychological stress in some men may be caused by anti-circumcision propaganda telling them that they are victims of “genital mutilation”, a term adopted from dissimilar female practices in particular ethnic groups. Sexual dissatisfaction results. We critically discuss claims about foreskin “gliding”, the eccentric foreskin-related sexual practice of “docking”, and the use of lubricant in masturbation. We further find that a study claiming to show numerous differences in socio-affective processing in men circumcised as neonates stem from statistically flawed and one-sided data that has been misinterpreted, and in fact shows the opposite of the hypothesis that psychological problems in some men can be attributed to the pain of their circumcision as newborns. Importantly, since the brain regions responsible for empathy, namely subcortical gray matter and white matter in frontal and parietal regions, were similar in neonatally circumcised and uncircumcised men, the null hypothesis remains null. In conclusion, we find no compelling evidence to support newborn circumcision pain being responsible for psychological problems in neonatally circumcised men. Men who come to believe that they are victims of their infant circumcision are in actual fact likely victims of false claims perpetrated by activist community groups with trenchant opposition to circumcision.

## Keywords

Sexual Function, Psychology, Male Sexual Health, Anti-Circumcision

\*Views herein may not reflect those of Cornerstone Therapy & Recovery Center.

## 1. Introduction

A lingering issue in sexual medicine is whether or not there are psychological sequelae associated with the circumcision of males. This topic was addressed by Tye & Sardi in a recent narrative review [1]. Overall, their review makes some good points, finding that research to date has involved low quality studies, and identifies several areas for future research. Some information is, however, incomplete or misleading. The aim of the present article is to provide a critical evaluation of the evidence and, in so doing, to fill in many of the gaps that remain in order that researchers in the field be better informed. This includes providing critiques of key studies Tye & Sardi cite. For example, we consider 1) whether psychological problems that some men attribute to their circumcision actually stem from stress caused by anti-circumcision propaganda, 2) examine unsubstantiated claims of sexual functions of the foreskin, such as “gliding”, 3) assess the eccentric foreskin-related sexual practice of “docking”, 4) present the high-quality research comparing sexual function and pleasure in circumcised and uncircumcised men, 5) address claims that circumcised men need to use a lubricant to compensate for their missing foreskin, 6) critically evaluate a study that claimed to support a hypothesis that newborn circumcision pain is responsible for psychological problems in men circumcised early in life, and 7) show that evidence-based policies on infant male circumcision are consistent with the procedure having net immediate and lifetime health benefits.

## 2. Evaluation and Discussion

### 2.1. Are Circumcision-Related Psychological Problems Caused by False Beliefs?

#### 2.1.1. Belief in a False Narrative

The key issue is whether infant circumcision *actually* causes sexual and psychological problems, or whether some men come to *believe* that it does. Sexual problems amongst men are common. Some men may seek to blame something, or someone, for their problems. People often do their own “research” by way of Internet searches. There they will find an abundance of websites by anti-circumcision groups telling them that circumcision is “genital mutilation” and has robbed them of a healthy sex life. Gullible men with little or no critical judgement or scientific understanding may succumb to the barrage of anti-circumcision arguments they read and become convinced that their circumcision is at the root of their sexual problems. Psychologists term this cognitive state “*idée fixe*” [2]. The stress caused by a belief that they are victims of their newborn circumcision, and that they had no say in the “circumcision decision”, may lead such men to develop psychological problems. The most extreme consequence of such a belief is ending one’s own life. A prominent opponent of circumcision (“intactivist”) in the Bay Area of San Francisco, Jonathon Conte blamed his infant circumcision for his depression before committing suicide [3]. A tribute was posted by his partner [4] and an overview was written by Circumcision Choice [5]. An-

other young man, Kevin Cagle, also committed suicide after a Facebook post in which he blames his circumcision, with tributes subsequently posted on-line by “Intaction” [6]. How many lesser-known men are there whose obsession over their infant circumcision has led them to the same fate?

In Anglophone and some other countries, most circumcisions are performed in infancy when the individual will have no experience with a foreskin, so making later misunderstandings about any long-term effects possible. Once men have been persuaded that their infant circumcision has harmed them, other psychological processes come into play, such as confirmation bias (seeking and accepting only that which agrees with one’s established belief, and rejection of that which disagrees). The risk of distress, depression and the general psychological impact of arguments opposing circumcision to these men, and to their parents, merits research.

Unsurprisingly, those who oppose circumcision dismiss evidence that fails to support their belief that circumcision causes harm. A good example is a study by Earp, Sardi & Jellison [7], which Tye & Sardi cite. This was premised on the observation that most circumcised persons in societies with culturally normative genital modification practices do not report circumcision-related psychological problems. Key to the study was the premise that circumcision causes harm, therefore leading them to hypothesize that the more satisfied a man was with his circumcision status, the stronger was his “false belief” that circumcision had not harmed him. To test this, the study recruited 999 US men from Amazon’s Mechanical Turk marketplace. After exclusion of men circumcised after infancy, there were 732 men circumcised as infants and 170 who were uncircumcised. A 10-item survey was conducted, of which 3 of the questions addressed the real aim of the study. For these questions, the men were asked to rate, on a scale of 1 to 5, satisfaction with their circumcision status, how much circumcision status was an issue for them, and the effect of circumcision status on their sexual experience, with 1 being very dissatisfied and 5 being very satisfied. The survey found that the circumcised men were (non-significantly) more satisfied with their status than were the uncircumcised men in the study. Earp and colleagues proposed that the findings proved that the circumcised men had adopted “*false beliefs*” to “*justify*” their “*genitally altered state*” in the setting of the US where being circumcised is the norm. Tye & Sardi failed to cite the critical evaluation of that study by Moreton, published in the present journal, pointing out the study’s serious flaws and its one-sided presentation [8].

Moreton conducted a systematic review of PubMed using keywords “male”, “circumcision”, “attitudes”, “satisfaction”, “acceptable”, and “education”, finding that most circumcised men are happy with their circumcision, and become happier the better informed they were about benefits and risks of circumcision, communicated in a professional and accurate medical way, so that they were able to understand the procedure, as well as the scientific knowledge regarding its medical, health, esthetic, and sexual benefits [8].

A YouGov survey in 2015 conducted amongst participants who had pre-reg-

istered [9], found that 86% of circumcised men were happy at having been circumcised and 29% of uncircumcised men wished they were circumcised [10].

Tellingly, men circumcised as adults are more satisfied with their circumcision status than those circumcised neonatally or in childhood [11]. This suggests that those with before and after experience know that lacking a foreskin is no handicap. The survey found that rather than actual circumcision status, lower *satisfaction* with circumcision status was associated with lower body image and more sexual problems.

In support of the premise that infant circumcision is responsible for harm to men's sexual function and experience, Tye & Sardi cited a study by Hammond & Carmack [12]. That study involved a survey of mostly North American men in 2012 and 2013 with the "loaded" title "*The Global Survey of Circumcision Harm*". The call for volunteers described the survey as being "*open to any man age[d] 18 or older who was circumcised as a child and believes or knows he was harmed by circumcision*" [13]. Thus, as stated by Tye & Sardi, the survey involved *only* self-selected men, "*who felt harmed by circumcision, and those active in online anti-circumcision communities*" who felt harmed by infant circumcision. Tye & Sardi acknowledge its limitations in that the "*outcomes may not be representative of all those who have been circumcised.*" An extensive critique [14], not cited by Tye & Sardi, found that not only was the sample unrepresentative of the circumcised male population, men-who-have-sex-with-men (MSM) were over-represented in that 36% of the participants were MSM, which vastly exceeds the population prevalence of MSM. Furthermore, 43% found out about the survey from anti-MC websites, 13% from a friend, 28% from searching the Internet (which is highly prone to bringing up anti-MC websites, as explained by Stern's article "*How circumcision broke the internet*" [15]), and 8% from "*men's organization/media*" (which tend to be anti-MC). The one-sided survey was clearly geared towards arriving at a predetermined outcome. As well as obfuscation, weak studies were cited selectively, and previous findings were misrepresented. Some men do report psychological distress over their circumcisions to the point of attempting to "restore" a pseudo-foreskin [16] [17] [18], but this obsessive behavior is consistent with *idée fixe* [2].

Numerous high-quality studies have failed to find long-term adverse effects of infant or later-age circumcision on psychological factors, sexual activity, function, satisfaction or self-esteem, irrespective of whether men were circumcised early in life or as adults (see systematic reviews [19] [20] [21] [22] [23] and a large British probability survey of sexual function [24]). Virtually all men in randomized controlled trials reported experiencing either no difference or an improvement in sexual function and pleasure after being circumcised [25] [26]. A well-designed longitudinal study in New Zealand examining neonatally circumcised males and uncircumcised males annually from the age of one year to 16 years and then at ages 18, 21 and 25 years found no difference in psychological outcomes [27].

### 2.1.2. Consequences of False Beliefs

Tye & Sardi appreciate that anti-circumcision propaganda is psychologically damaging. They speculate that “*Outside of a research context, for example, in advocacy materials, it is possible that framing circumcision as a harm or ‘mutilation’ may similarly cause distress in circumcised individuals who would otherwise not be inclined to interpret their circumcised state in such a negative light.*” Thus, exposure to such claims may be the root cause of the psychological problems felt by some circumcised men, especially men circumcised in infancy and who would therefore have no knowledge of what sexual experience was like as an uncircumcised man. Men who have sexuality/sexual satisfaction issues and those who suffer from erectile dysfunction, premature ejaculation, dyspareunia, orgasm difficulties or lack of sexual desire may, after becoming convinced that their infant circumcision is the cause of their problems, fail to seek professional help, such as by seeing a medical practitioner for treatment. As well as falsely attributing their problems to their infant circumcision, parental blame may also result. Not only complaints by sons, but parental exposure to the same anti-circumcision social media pages may also cause parents distress at having had their sons circumcised. Deeper psychological issues may be present, and men affected by these may project their problem on to various targets, such as their infant circumcision or their parents’ decision to have them circumcised. The on-line article “*Intactivism is a mental disorder*” catalogues, with sources, numerous examples of people developing mental health issues after being drawn into the anti-circumcision, or so-called “Intactivist,” movement. The Reddit group “Circumcision Grief” [28] contains posts from males who were content with their circumcisions until they “learned” about circumcision on-line, whereupon they became distressed. A research study into the psychological effect of on-line misinformation from Intactivist groups would be worthwhile.

## 2.2. Unsubstantiated Anecdotes and Eccentric Practices

### 2.2.1. Gliding

Possession of a foreskin has been claimed to allow a man to experience “*gliding*”, which involves the foreskin sliding back and forth over the penile glans during penetrative intercourse or masturbation. A 1980 article by Lackshmanan [29] appears to be the original source of this doctrine. Rather than saying that gliding is pleasurable, the author merely stated that the foreskin can glide back and forth. Tye & Sardi cite a chapter by Ball [30] in suggesting that “*gliding can be enjoyed as a sexual activity in and of itself*”. But Ball drew his sample from personal acquaintances, an anti-circumcision organization (NORM-UK), and foreskin-related Yahoo groups, thus making it biased. His chapter was published, moreover, in a book edited by anti-circumcision activists, thus further calling it into question. Eighty percent of those without phimosis in Ball’s survey claimed pleasurable feelings when their foreskin was retracted. Ball did not, however, discuss specific sexual acts involving the foreskin. Tellingly, Ball stated “*Some sixty percent thought they could distinguish feelings between the foreskin and*

*the glans.*” In other words, 40% could not, and the rest only “*thought*” they could. Notably, Ball did not mention gliding, rather only “*retraction*,” which is not necessarily the same thing. Gliding implies back-and-forth movement, whereas retraction means backward movement only. So, Tye & Sardi’s reference does not support their claim. For women, some report that gliding detracts from their sexual experience [31]. Many uncircumcised men have foreskins that retract fully upon erection, so would not experience gliding [32]. What would a condom do to the phenomenon? Tye & Sardi concede that “*We do not have data on what percentage of persons have long enough foreskins to allow for this particular manipulation of the penile skin system, nor on the percentage who find it pleasurable.*” A review of gliding concluded that “*gliding is simply a means of getting the foreskin out of the way [prior to penetration] and returning it afterwards*” [33]. Tye & Sardi give the impression that they find it not to be the most important issue, and we agree with their call for research “*on changes in subjective sexual experience and functioning in terms of the biomechanical action of the foreskin across the glans*”, *i.e.*, gliding. But we suspect such research will confirm that gliding is unimportant.

### **2.2.2. “Docking”**

MSM engage in a wide array of sexual practices. At least one of these has received little critical attention to date, namely, “*docking*,” but was discussed by Tye & Sardi. This practice involves pulling one’s foreskin over the glans of a partner’s penis. But what proportion of MSM engage in this activity? Data on foreskin size [34], cited by Tye & Sardi, indicate that very few men are likely to have a foreskin big enough to accomplish this feat even if they wanted to. And it does not follow that many MSM would want to engage in docking even if they could. Once they achieve docking with a partner, what then? Insight into this practice was provided to the present authors by two MSM. While anecdotal, their comments were illuminating, so we quote each. One, a gay colleague, opined that “*Docking is a fringe sexual practice engaged in rarely by some homosexual men. It is limited mostly to parties involved in foreskin fetishization who are seeking a quasi-uncircumcised ‘experience’ or just want to have physical contact with a foreskin*”. Another MSM remarked: “*As a gay man myself I can’t see what possible appeal it could have...boring!*” In short, docking is physically difficult or impossible for most MSM, and involves only a minority within the minority that can manage it. We trust that our evaluation of docking will bring some perspective to this topic and encourage further research involving a larger sample of MSM.

## **2.3. Sexual Pleasure**

### **2.3.1. Does Being Circumcised Dampen Sexual Pleasure?**

Rather than removing the opportunities for foreskin-related activities, one might argue that lacking a foreskin opens up other possibilities, regardless of sexual orientation. A highly cited US study by Laumann *et al.* of data from the National

Health and Social Life Survey of 1410 American men aged 18 - 59 years found uncircumcised men (both heterosexual and MSM) were more likely to experience sexual dysfunctions, especially later in life [35]. This was also the finding of the most recent systematic review and meta-analysis of sexual function [22]. In the *JAMA* article, Laumann and coworkers noted that circumcised men had a greater sexual repertoire and received more oral sex, a pattern that differed across ethnic groups, suggesting an influence of social factors [35]. A reason may be because of the strong preference by women for a circumcised penis for fellatio, as found in a recent systematic review of all studies [36], and by Bossio *et al.* [37]. Better health and hygiene (no smegma) appear to be major reasons. We consider it doubtful that circumcised men would complain about receiving more fellatio. So although, as stated by Tye & Sardi, circumcised “*individuals must rely on a narrower range of physical acts that conform to the contours of their penis*”, they may actually have more opportunities opened up to them.

Tye & Sardi mention “*changes in the need for lubrication*” for circumcised men, but what changes? There is a lack of empirical evidence to support their statement, making the need for lube speculative [38]. Clearly, experimental evidence is required, such as determination of the coefficient of friction during coitus for a penis without a foreskin compared with a similar sized penis with a foreskin. If the hypothesis were true, then the circumcised penis should require more force (in Newtons) to achieve penetration. The only experiment to date involved an attempt by Taves to copulate with a hole cut in a Styrofoam cup, the cup having been placed on a balance [39]. He did this with his foreskin forward and then retracted, deciding that the former required less force. Obviously, a hole in a Styrofoam cup is not an accurate model for a human vagina.

The question has in fact been answered. If more force was required, then it could cause discomfort to one, or other, or both participants. It could even cause injury (coital trauma), which, again, would serve as a proxy. Well-designed observational studies, data from randomized controlled trials, systematic reviews and meta-analyses have found that circumcision either has no effect on dyspareunia and penetration or favors the circumcised penis (Table 1).

**Table 1.** Studies of sexual function and pleasure comparing circumcised and uncircumcised men.

Study type	Reference	Findings
<i>Cohort study</i>		
Feldblum <i>et al.</i> , 2015	[40]	194 men: 87.5% reported sex was better after circumcision and 16.6% found penetration to be easier. The latter proportion had either less pain on intercourse or fewer coital injuries.
<i>Multistage, clustered and stratified probability study</i>		
Homfray <i>et al.</i> , 2015	[24]	No difference in sexual function between circumcised and uncircumcised men.



**Continued**Case control/cohort studies

- Nordstom *et al.*, 2017 [41] >3000 men: less pain on intercourse for men after circumcision ( $p < 0.001$ ).
- Westercamp *et al.*, 2017 [42] >3000 men: fewer coital injuries in circumcised men ( $p < 0.001$ ).

Cohort studies

- Brito *et al.*, 2017 [43] 500 men: fewer coital injuries in men after circumcision ( $p < 0.001$ ).
- Galukande *et al.*, 2017 [44] 304 men: easier penetration reported by 42.2% of men after circumcision. The rest, presumably, no difference.

Randomized controlled trials

- Kigozi *et al.*, 2008 [25] Approx. 1500 men: no difference in ease of penetration, or pain during intercourse, between circumcised and non-circumcised men.
- Kigozi *et al.*, 2009 [45] 455 women: 97% overall satisfaction with their partners' circumcisions. Only one woman in the entire group of 455 reported pain on intercourse, which was not statistically significant.
- Krieger *et al.*, 2008 [26] 1995 men: no difference in pain during intercourse for men whether circumcised or not.

Systematic reviews

- Morris & Krieger, 2013 [19] No difference in pain during intercourse or any other aspects of sexual function or pleasure between circumcised and uncircumcised men.
- Cox *et al.* 2015 [46] Histological correlates indicate foreskin lacks neuroreceptors, mostly genital corpuscles, responsible for sexual pleasure, these being concentrated in the glans and underside of the shaft especially near the frenular region [47]. In contrast, foreskin neuroreceptors resemble those in skin elsewhere that sense touch, heat, cold, and pain.
- Morris & Krieger, 2020 [20] No difference in pain during intercourse or any other aspects of sexual function or pleasure between circumcised and uncircumcised men.
- Shabanzadeh *et al.*, 2016 [23] Mostly no difference or a decrease, in pain during intercourse, in circumcised men.
- Grund *et al.*, 2019 [48] Women: greater sexual satisfaction and function in higher-quality studies.
- Morris *et al.* 2019 [36] Women: circumcised penis preferred for sexual activity, less dyspareunia, better hygiene, and its more esthetic appearance.



**Continued***Systematic reviews that included meta-analyses*

Tian <i>et al.</i> , 2013	[21]	No difference in any of the common forms of sexual dysfunction between circumcised and uncircumcised men.
Yang <i>et al.</i> , 2018	[22]	Circumcised men had 64% lower pain on intercourse, no difference in premature ejaculation and orgasm difficulties, 58% lower erectile dysfunction, 28% longer intravaginal ejaculatory latency time.

Tye & Sardi cite a study by Kim and Pang of “sexuality” among 377 men (255 men circumcised after age 20 years and 118 who were uncircumcised) [49]. Although no significant differences in sexual drive, erection, ejaculation, and ejaculation latency time were found, masturbatory pleasure decreased in 48% after circumcision, while pleasure increased in 8%, with sex life improved in 6% and worse in 20%. Tye & Sardi failed, however, to cite Willcourt’s extensive critique of the study [50]. Willcourt questioned their use of “*sexuality*” rather than “male sexual response” in the title, and the study’s focus solely on masturbation, there being no data on sexual intercourse, which Willcourt deemed more important. Other problems were the lack of information on sexual inclination or sexual expression of the participants, no details on recruitment of participants, the very limited and unrepresentative proportion of the whole group used for evaluation in that only 138 of the 373 recruited were surveyed (those being the ones who could compare their sex life before and after circumcision), no information about the amount of foreskin and/or frenulum removed during circumcision, the definition of “*severe*” scarring, as all men circumcised as adults would have a scar, the authors’ statement that “*all Korean men are circumcised*”, yet only 68 of the men surveyed were circumcised. Willcourt therefore dismissed the study and referred to the peer-review process that led to its publication as being biased.

**2.3.2. Lubrication**

We agree with Tye & Sardi’s call for more data on “*use of lubricants*.” Anecdotally, lube is popular for masturbation amongst circumcised males. But is this because lube makes masturbation easier for them? Or because it replicates sensations of sexual intercourse? Or is cultural (e.g., in the USA)? Or because it feels good, and in fact better than if there was a foreskin in the way?

The claim by circumcision opponents that if circumcised, US men need to use lube for sexual activity, has little or no empirical support, *i.e.*, is speculative. Even if evidence in support were produced, to claim that this was due to circumcision introduces an ecological fallacy (a fallacy in the interpretation of statistical data that occurs when inferences about the nature of individuals are deduced from inferences about the group to which those individuals belong). It would need to be shown that a statistically higher proportion of circumcised males

were using lube than uncircumcised males. In the absence of published data, we are left with lower quality Internet surveys. One such, in 1997, of 603 males, mostly teenagers and young men, 81.3% from the US, found 65.1% of the circumcised masturbated without, whereas 34.9% used lube, and 80.3% of the uncircumcised masturbated without, whereas 19.7% used lube [51]. At face value the findings support use of lube more amongst circumcised males, although two things are noteworthy: 1) most circumcised males did not use lube, and 2) a large minority of uncircumcised males did use lube. One might speculate that a tight circumcision leaves little mobility in the shaft skin, which could create difficulties for masturbation that lube can ease. There are, however, Internet polls in which the majority of circumcised males express a preference for being tightly circumcised. This might point to a tight circumcision not having a detrimental effect on sexual pleasure. Overall, claims that foreskins aid penetration or have a lubricating effect during coitus are not supported by the current evidence. What little evidence there is does not unambiguously support the foreskin-required-for lubrication argument, but the topic does seem worthy of scientific study.

### 2.3.3. Foreskin Naivety

While, as stated by Tye & Sardi, circumcised men and their female sexual partners may not have “*any first-hand experience in how a foreskin may feel and function in sexual activity*,” for men this seems less important than the lifetime of strong medical, health and sexual benefits (Table 1 and subsection 2.6 below). And for women, most prefer the circumcised penis for sexual activity, less dyspareunia, better hygiene, and its appearance being more attractive, irrespective of culture [36] [48].

## 2.4. Socio-Affective Processing

Tye & Sardi cite a US study by Miani and colleagues (co-author Earp) who compared 21 socio-affective processing parameters between uncircumcised men and men (aged  $36 \pm 10$  SD years) circumcised neonatally prior to the routine use of local anesthesia for pain relief [52]. But Miani *et al.* failed to correct for multiple testing, so resulting in an excessive number of statistically significant differences. Higher sexual libido and desire (each  $p < 0.001$ ) among circumcised men would have survived correction. Those findings could, however, have reflected “reverse causation,” *i.e.*, lower sexual activity amongst uncircumcised men owing to increased prevalence of phimosis-related penetration problems, dyspareunia, premature ejaculation and/or erectile dysfunction, as found in the most recent (2018) meta-analysis by Yang *et al.* [22]. Crucially, Miani *et al.* noted that, “*contrary to our expectations, neither empathy nor trust [were] found to be affected by early circumcision*”. This contradicted Miani *et al.*’s core hypothesis that circumcised men may suffer from impairments in socio-affective processing as a result of circumcision-related procedural pain causing neural damage, specifically, “*reduced subcortical gray matter and reduced white matter*

in frontal and parietal regions, structures associated with empathic processing”, as they point out *can* occur in, “*premature infants, who undergo invasive painful procedures in the NICU*”. Miani *et al.*’s study thus has serious limitations. Since 1999, routine use of local anesthesia has been recommended by the American Academy of Pediatrics for neonatal circumcision [53].

## 2.5. Pediatric Policies

Contrary to Tye & Sardi, as well as views by pediatric bodies in countries other than the US, and by activist anti-circumcision community groups, evidence-based circumcision policy statements by the American Academy of Pediatrics (AAP) [54] [55], the US Centers for Disease Control and Prevention (CDC) [56] [57] [58], and the Circumcision Academy of Australia [59] have found that benefits of infant circumcision exceed risks and that uptake should be facilitated in the interests of public health, accompanied by provider training, education of parents early in a pregnancy to facilitate their decision in the event that they end up having a boy, and provision of third party insurance coverage. Criticisms of AAP and CDC recommendations were repudiated by the AAP [60] [61] and CDC [62] who provided suitably balanced information on the issues raised. The contrary arguments were evaluated in an extensive systematic review, which found that these were contradicted by the overwhelmingly strong scientific evidence [63]. **Table 2** provides a summary of the latest policies, published critiques, and responses to these.

**Table 2.** Published criticisms of circumcision policies by the American Academy of Pediatrics (AAP) in 2012 and the Centers for Disease Control and Prevention (CDC)’s draft statement in 2014.

Publication	Reference	Critique	References
<i>2012 AAP policy</i>			
Frisch <i>et al.</i> 2013	[64]	AAP Task Force 2013	[65]
Svoboda & Van Howe 2013	[66]	Morris <i>et al.</i> 2014	[67]
Jenkins 2014	[68]	Morris <i>et al.</i> 2014	[69]
Darby 2014	[70]	Morris 2014	[71]
Darby 2015	[72]	Morris <i>et al.</i> 2016	[73]
Svoboda <i>et al.</i> 2016	[74]	Brady 2016	[75]
		Morris <i>et al.</i> 2017	[76]
<i>2014 CDC draft recommendations</i>			
Earp 2015	[77]	Morris BJ. 2015	[78]
Van Howe 2015	[79]	CDC 2018	[80]
Adler 2016	[81]	Rivin <i>et al.</i> 2016	[82]
Frisch & Earp 2018	[83]	Morris <i>et al.</i> 2017	[84]
Public Comments	[62]	CDC 2018	[62]
<i>2010 Royal Australasian College of Physicians</i>			
RACP 2010	[85]	Morris <i>et al.</i> 2012	[86]
Forbes 2012	[87]	Morris <i>et al.</i> 2012	[88]
Jansen 2016	[89]	Wodak <i>et al.</i> 2017	[90]

**Continued**2015 *Canadian Paediatric Society*

Sorokan <i>et al.</i> 2015	[91]	Morris <i>et al.</i> 2016	[92]
Robinson <i>et al.</i> 2017	[93]	Morris <i>et al.</i> 2017	[94]

Listed in the right-hand column are critiques pointing out flaws in the publications listed in the left-hand column. Also listed on the left-hand side are contrary policies on circumcision by non-US pediatric bodies and in the right-hand column evidence-based critiques of these.

**3. Conclusion**

Our evaluation finds no compelling evidence that infant circumcision *per se* has long-term adverse psychological effects. Harm felt by some men likely stems from belief in pervasive anti-circumcision propaganda portraying circumcision as harmful. It is reasonable to conclude that there are no long-term adverse psychological effects on men from their infant circumcision. This was also the finding of a recent systematic review [95].

**Disclosures**

Stephen Moreton is an editor of and contributor to <http://www.circfacts.org>, a website that provides evidence-based information on male circumcision. John Krieger is co-inventor of a circumcision device patented by University of Washington. He has not received any income from this. Brian Morris is a member of the Circumcision Academy of Australia, a not-for-profit, government registered, incorporated medical society that provides evidence-based information on male circumcision to parents, practitioners and others, as well as contact details of doctors who perform the procedure (<https://www.circumcisionaustralia.org>). The authors have no financial, religious, or other affiliations that might influence the topic of male circumcision.

**Conflicts of Interest**

The authors declare no conflicts of interest regarding the publication of this paper.

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