

RACP's policy statement on infant male circumcision is ill-conceived

Abstract

Objective: To conduct a critical peer-review of the 2004 Policy Statement on routine male circumcision produced by the Royal Australasian College of Physicians (RACP).

Method: Comprehensive evaluation in the context of the research field.

Results: We find that the current Statement downplays the wide-ranging life-long benefits of circumcision in prevention of urinary tract infections (UTIs), penile and cervical cancer, genital herpes and chlamydia in women, HIV infection, phimosis, and various penile dermatoses, and at the same time overstates the complication rate. We highlight the many errors in the RACP Statement and note that it sidesteps making a conclusion based on circumcision's well-documented prophylactic health benefits by instead referring to the status of the foreskin at birth. In the era of preventative medicine we view this as irresponsible.

Conclusion: The RACP's Statement on routine male circumcision is not evidence-based and should be retracted.

Implications: In the interests of public health and individual well-being an extensive, comprehensive, evidence-based revision should be conducted so as to provide scientifically accurate, balanced information on the advantages, and also the low rate of mostly minor complications, associated with this simple procedure, which for maximum benefits and minimal risk should ideally be performed in the neonatal period.

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The Royal Australasian College of Physicians (RACP) Division of Paediatrics & Child Health (formerly the Australian College of Paediatrics [ACP]) has produced a Policy Statement on circumcision¹ in which the summary states (in bold) that "there is no medical indication for routine male circumcision", i.e. the foreskin of an infant as it presents at birth has no medical condition that would mandate its removal. This is often misinterpreted by professional and lay bodies as saying that the RACP is opposed to circumcision. An "appeal to authority"² may be the only position they might fall back on, given their lack of training or time to study the evidence.

Other, now somewhat dated, position statements on circumcision by paediatric bodies elsewhere have similarly been criticised by academic experts, including, in the case of the American Academy of Pediatrics (AAP) Statement, the former Chair

of the AAP Task Force on Circumcision.³⁻⁵

The RACP Statement is marred by references to opinion pieces by extremist anti-circumcision organisations. As an example, in section 2, in the same sentence it lumps misconceptions from Victorian times in with recent hard scientific evidence, referring to the latter as "claims".

When the Statement says that it concurs with a previous conclusion by the ACP, it should be recognised that the 1996 ACP Statement was a substantially watered-down document emanating from a credible review of the medical literature by a working party which reported in 1995 emphasising the considerable medical benefits at the time in a fair and balanced manner. In the decade since this somewhat neutral statement, the evidence in favour of circumcision has continued to increase. Yet in its next Statement, in 2002, the RACP failed to address this adequately, and very few of our substantive criticisms to the RACP were

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addressed in devising its 2004 Statement, which remains a non-peer-reviewed internet document.

In this article, we point out the multiple errors in the current Statement, many of which have serious public health ramifications.

Cervical cancer

A large international collaborative study confirms the lower incidence of cervical cancer in women with a circumcised male partner.⁶ Although "monogamous women whose male partners had six or more sexual partners and were circumcised had a [5.6-fold] lower risk of cervical cancer than women whose partners were uncircumcised", the Statement neglects to mention that women whose partner had an intermediate sexual behaviour risk index were also protected (OR 0.50). In an accompanying editorial⁷ it was suggested that these findings were probably an underestimate of the true risk to women.

The RACP Statement goes on to recommend use of condoms in lieu of circumcision "to inhibit sexual transmission of HPV" (the causative agent), despite there being no significant difference in protection against cervical cancer between condom users (OR 0.83) and non-users (OR 0.67).⁶ Human papillomavirus (HPV) is a highly infectious skin virus transmissible during foreplay. A more specific study on condom use *per se* is, nevertheless, needed.

When the Statement mentions an "increased risk of [HPV] infection in uncircumcised men who indulged [!] in high-risk [?] behaviours" it may be referring to uncircumcised men who don't use condoms or perhaps men who have had sex with more than one woman in their life, either concurrently or sequentially. The latter casts normal men as 'high-risk', which is unreasonable.

The Statement's speculation on future immunisation against HPV is premature, despite recent success in Phase III trials of HPV16 and HPV18 vaccines. Fifty of the 200 types of HPV are ano-genital. Although vaccination against the 8 most common is predicted to prevent 89% of cases [XC, unpublished], vaccination could lead to their replacement by rarer types not vaccinated against. Vaccination has to occur prior to sexual debut, and availability, cost, or extent of participation may also limit effectiveness. HPV vaccines can, moreover, increase tumour invasiveness.⁸

Herpes and chlamydia in women

History of intercourse with an uncircumcised man (ever) is also a risk factor for herpes simplex type 2 infection in women (OR 2.2, 95% CI 1.4–3.6),⁹ and *Chlamydia trachomatis* (OR 5.5, 95% CI 1.7–20).¹⁰

HIV/AIDS

The RACP Statement dismisses universal neonatal circumcision as an AIDS prevention strategy in countries like Australia, saying that circumcision to reduce transmission⁵ is more relevant in Third World countries. Although lower, lack of circumcision is likely to account for at least some HIV infections in Australasia. Moreover,

in a highly mobile global society, risk cannot be ascribed parochially. In contrast to what the RACP Statement asserts, the role of the foreskin in HIV transmission is now compelling. This includes a detailed meta-analysis,¹¹ fastidious matching of case and control groups to eliminate confounding factors,¹² absolute protection in a 30-month study of men with an infected female partner,¹³ a 6.7-fold reduction in adjusted relative risk (0.14; 95% CI 0.04–0.62) in another,¹⁴ in agreement with the 8.2-fold reduction seen in an early prospective study,¹⁵ and biological data showing that the inner, mucosal lining of the foreskin, unlike the outer layer and rest of the penis, lacks a protective keratin barrier,¹⁶ meaning that, for an otherwise healthy penis, the foreskin is the route of infection of HIV, which has been demonstrated to accumulate rapidly in the abundant Langerhans and other immune system cells in the inner foreskin epithelium.¹⁷ A Cochrane review¹⁸ recommended waiting for the outcome of three randomised, controlled trials. The first results from one of these showed a 76% reduction, i.e. was as effective as any hoped-for HIV vaccine.¹⁹

Condoms, *when always used*, reduce infection by about 80–90%. Although important, they are far from a panacea for HIV-prevention; and the foreskin can be exposed to infected fluids prior to condom application. This also applies to homosexual men who engage in 'docking',²⁰ a source of sexual pleasure rendered impossible by circumcision.

Since heterosexual transmission was the initial, and still is the major, mode of transmission world-wide, lack of circumcision would appear to be a major contributing factor to the AIDS epidemic. Even though other modes of transmission have taken over in the west, heterosexual transmission to the male may be reduced by lowering foreskin prevalence among men, many of whom will visit countries in which HIV abounds. Moreover, in some,^{21,22} but not other,¹² studies the effectiveness of circumcision in AIDS risk reduction was greater when performed prior to puberty or sexual debut.

Penile cancer

The RACP Statement makes penile cancer seem much rarer than it really is – to wit, its citing of *annual incidence* rates of penile cancer of 1 in 100,000. The annual incidence of fatal heart attack – ~200 in 100,000 – also seems small, yet it accounts for 22% of all deaths. Actual lifetime risk of penile cancer in an uncircumcised man is 1 in 400 to 900,²³ as in Australia.²⁴ It represents 1–2% of cancer deaths in men in developed nations and 10–22% of all male malignancies in some developing countries.²⁵ Presentation is split equally between carcinoma *in situ* and invasive penile cancer. The latter is lethal and the RACP Statement fails to point out that its incidence is 22 times higher in uncircumcised men.^{3,26} Notably, men circumcised early in life are afforded greater protection than if circumcised in adulthood.²⁷ HPV is the culprit in basaloid and warty carcinomas, most of which are HPV positive.^{25,28} Similarly, half of all vulvar carcinomas are HPV-positive (cf. the 99.7% HPV positivity in cervical cancer). The rate of HPV infection is, moreover, lower in circumcised men (OR

0.37).⁶ High-risk HPV is found more frequently in verrucous carcinomas than giant condylomas (which are caused by low-risk HPV) and keratinising and verrucous carcinomas are HPV positive in one-third of cases.²⁵

As is the case for breast cancer, the sex-related organ is often surgically removed, so adding to the devastating physical and emotional impact of penile cancer. And the five-year survival rate is lower.²⁹

Prostate cancer

The lifetime risk of prostate cancer is 1 in 11²⁴ and, not mentioned in the RACP Statement, it is twice as common in uncircumcised men.^{30,31}

Urinary tract infections

In contrast to what the RACP Statement says,¹ infections of the urinary tract are regarded as common in the paediatric population.^{32,33} Rather than the increased rate in uncircumcised boys being 3–12 fold,¹ it is really 5–89 fold (95% CI 11–14), averaging 12-fold in a large meta-analysis.^{34–36} The RACP's underestimate ('5-fold') arises from inappropriate averaging of small and large studies.

The >90% effectiveness of newborn circumcision in preventing UTI makes it as protective as vaccination of children in disease prevention.³

By way of biological support, the strains of *Escherichia coli* and *Proteus mirabilis* present are fimbriated, which facilitates their adherence to the inner lining of the foreskin and consequent colony formation; these are pathogenic to the urinary tract and pyelonephritogenic.^{37–42} Pathogenic bacteria were found in the periurethral region of 64% of boys, without phimosis, prior to circumcision, but in only 10% 4 weeks afterwards; for the glanular sulcus these figures were 68% and 8%, respectively.⁴³ This study concluded that the periurethral flora originate from the deeper preputial regions and emphasised the beneficial role of circumcision.⁴³

The RACP Statement says UTI incidence in uncircumcised boys is 1–2%. It then presents a trade-off analysis using the lowest end of this range (1%) against an inflated figure for serious complications (haemorrhage and infections) of 2% to say there would be 2.5 complications for every UTI prevented. However, more credible analyses involving 100,000 and 354,297 US male infants each found the complication rate was 0.2%.^{44,45} The latter then calculated that 6 UTIs could be prevented for every circumcision complication.⁴⁵ The RACP Statement cites this reference, but not these data, merely saying that "other figures can be used to come to a different conclusion".

A study in western Sydney by the Statement's co-author J.C. noted a UTI rate of 6% in uncircumcised boys aged 0–5 years.⁴⁶

The RACP Statement does not mention that the highest prevalence and greatest severity of UTIs is prior to six months of age.^{35,47} It is, moreover, misleading for their Summary to state that, "In Australia and New Zealand the circumcision rate has

fallen considerably in recent years and it is estimated that currently only 10–20% of male infants are routinely circumcised." In reality, the fall from 90% to 10% took place 30 years ago and is now reversing. Medicare statistics,⁴⁸ which relate only to rebate *claims* for circumcision, and are thus underestimates, show a circumcision rate of 17% Australia-wide, implying an actual rate higher than this. For boys aged <6 months Medicare data show a rise from 10.6% in 1994 to 12.7% in 2004. In the most populous states rate is 16.3% (NSW) and 19.5–20.8% (Queensland).⁴⁸ To Medicare figures one must add circumcisions performed by hospital doctors on public patients in public hospitals, ones paid for privately, and those covered by Veteran's insurance.

The RACP Statement omits to mention the pain and, in some cases, fatalities from UTIs. Moreover, pyelonephritis and renal scarring^{42,49} occur in 7.5% of UTI cases⁵⁰ and predisposes half of these infants to serious, life-threatening conditions later in life.⁵¹ Furthermore, the *E. coli* responsible for UTI form impenetrable, protective 'pods' on the surface of the bladder, which allow them to resist host defences and antibiotics.⁵² Because UTIs are associated with long-term morbidity and potential mortality,³² prevention by circumcision is desirable.

The Statement nevertheless does recommend circumcision for boys with recurrent UTIs. We agree, moreover, that "there is no evidence that the increased incidence of [UTI in uncircumcised boys] is due to poor hygiene", which is at best poor and at worst non-existent.^{53,54}

Phimosis

Circumcision also prevents an array of physical and inflammatory conditions. The foreskin should dislodge and retract over the glans by age 5. If not, the cause could be a narrow foreskin orifice. This is termed 'phimosis'. It affects ~10% of uncircumcised men. The RACP Statement in saying the rate of phimosis is 'at least 1%' is referring to secondary cicatrisation of the foreskin due to balanitis xerotica obliterans (i.e. pathological phimosis in which the orifice is constricted from skin dryness, shrinkage and atrophy),⁵⁵ as opposed to an anatomically narrow orifice, which is what is usually meant by phimosis.^{56,57} The rate of phimosis is not disclosed in the Statement, but, as reviewed by Bailis⁵⁶ and Cox,⁵⁷ has been reported as 20% at age 5–13,⁵⁸ 8% at age 8,⁵⁴ 14% amongst British soldiers,⁵⁹ and 9% in German youths⁶⁰ and men.⁶¹ Phimosis is strongly associated with invasive penile carcinoma (OR, 16).^{28,62}

Inflammatory dermatoses

The extensive reviews of diseases of the penis^{63,64} are not referred to in the RACP Statement. The rate of inflammatory skin conditions is 3 times higher in uncircumcised men⁶⁵ and include psoriasis (chronic skin disease of scaling and inflammation), penile infections, lichen sclerosus (white lumpy lesions), lichen planus (wart-like lesions), dermatitis (flaking skin), and Zoon balanitis (small red lumpy lesions). All patients with Zoon balanitis, bowenoid papulosis (warts), and nonspecific balanoposthitis (inflammation

of foreskin and glans) were uncircumcised.⁶⁵ Lichen sclerosis is found in 4–19% of all foreskins, and in older patients this or other inflammatory changes lead to phimosis.⁶⁶

Balanitis: Balanitis (inflammation of the glans) is seen in 11–13% of uncircumcised men, but in only 2% of the circumcised.⁶⁴ In uncircumcised men with diabetes incidence is 35%.⁶⁴ Uncircumcised boys have twice the rate of balanitis,^{68, 69} and balanitis caused by the group A haemolytic variety of *Streptococcus* is present exclusively in uncircumcised boys.⁷⁰ *Mycobacterium smegmatis* has been implicated in plasma cell (Zoon) balanitis,⁶³ which is characterised by erythema (in 100%), swelling (in 91%), discharge (in 73%), dysuria (in 13%), bleeding (in 2%) and ulceration (in 1%).⁶⁴

Balanoposthitis: The RACP Statement says that diabetes 'may' be a risk factor for balanoposthitis (inflammation of glans and foreskin), failing to point out that this condition is common in uncircumcised diabetic men, owing to a weakened shrunken penis⁶⁷ and that such men also have more sexual intercourse problems. Diabetes is widespread, inherited and rising in incidence, so family history should add to considerations about circumcision of an infant.

Table 1: Approximate number of males who need to be circumcised to prevent one case of each condition associated with lack of circumcision (number needed to treat: NNT) and number that need to be circumcised to result in one of each type of complication (number needed to harm: NNH).

Condition	NNT	Derived from data in refs
Prostate cancer	6	24, 31
Balanitis	10	64, 67
Phimosis	10	54, 58-60
Urinary tract infection	50	35, 36
Pyelonephritis	100	50
– with concurrent bacteraemia	1,000	51
– childhood hypertension	1,500	51
– end stage renal disease	13,000	51
Syphilis	200	100, 101
HIV infection	1,000	102
Penile cancer	1,000	23, 24
Cervical cancer in partner	100	6
Condition	NNH	
Local bruising at site of injection of local anaesthetic (if dorsal penile nerve block)	4	44
Infection, local	600	44
Infection, systemic	4,000	44
Excessive bleeding	1,000	44
Need for repeat surgery (skin bridges or too little foreskin removed)	1,000	44
Loss of penis	1 million	44
Death	virtually zero	44

Note:
Values are based on statistics for US and/or, where available, Australia.

Sexual benefits

Circumcised men have fewer sexual problems.⁷¹ This could, however, be cultural (better educated, white, middle class, with less restrictive sexual mores). Satisfaction with sexual functioning and sensitivity measurements are generally similar for each category of penis.⁷²⁻⁷⁶ The only exception was a study in which 38% reported a perceived problem,⁷⁴ although 93% of these were circumcised for a medical condition. Reduced sensitivity was not statistically significant. In one study, circumcision for non-medical reasons increased ejaculatory latency time, which the study participants considered an advantage.⁷⁵ Indeed, pharmacies sell lidocaine-based products to reduce sensitivity. Female preference for the circumcised penis has also been found.⁷⁷

Complications

The RACP Statement mentions that "most series describe a complication rate of about 2–10%".⁷⁸⁻⁸⁰ However, this ignores the two biggest studies in which rate was 0.2%.^{44, 45} Nevertheless, a range of opinion is apparent. The RACP Statement defines a complication as "haemorrhage, infection, glanular ulceration, meatal stenosis, inadvertent injury to the urethra (fistula), too much skin removed, anaesthetic complications, psychological trauma, secondary phimosis and secondary chordee." It then states that "the true incidence of major complications ... is reported to be from between 0.2% to 0.6% to 2–10%", the latter being what it cited earlier for all complications. More helpful is to provide actual data. Doing this^{35, 81, 82} reveals the rarity of any serious consequences (Table 1).

Trade-off analyses are limited, but in the case of penile cancer, a large study in Washington State calculated that two complications could be expected for every penile cancer prevented.⁴⁵ Based on the data above, overall incidence of foreskin-related medical problems is ~1 in 3 (Table 1). When considered next to the incidence of (mostly minor) complications of 1 in 500,^{44, 45} circumcision prevails by >100:1. Even more when conditions caused in women are taken into account.

Rates

The RACP Statement cites a rate of circumcision in the USA of 60%, whereas National Center for Health Statistics (NCHS) data for the past 20 years exceed this value, the most recent being 65.3%.⁸³ NCHS figures are based on hospital records, but many US hospitals do not record circumcisions. Moreover, the rate amongst the traditionally non-circumcising Hispanic groups is increasing (not decreasing, as the Statement asserts in section 2) as subsequent generations adopt local practice. Among Anglo-Celtic whites and blacks the rate is close to 90%,⁸⁴ any lower overall figure being a dilutional effect of Hispanic, Asian and European immigrants. Moreover, the newborn rate is increasing by 6.8% per year in the US.⁸⁵

In the UK, a rate of 6% is suggested. However, publications give: 7–10% for boys aged <15 years,⁸⁶ 12.5% for ages 16-24 years, 15.9% for ages 25-34 and 26.4% for ages 35-44 (n = 1,874,

2,111 and 2,049, respectively),⁸⁷ and 48% in 305 London males aged 4–93 (av. 42 years).⁶⁵ In the 2000 British National Survey of Sexual Attitudes and Lifestyle the rate was 15.8% in men aged 16–44, 19.6% in those aged 40–44 and 11.7% in the 16–19 year-olds.⁸⁸ The rate was 98.7% in Jewish men, 9.8% in Hindus, Sikhs and Buddhists, and was slightly more common in men who had had a homosexual partner or one from another country.⁸⁸

Rates for Australia were detailed earlier under 'Urinary tract infections', showing a rise to at least 20%.

We suggest that by making circumcision appear uncommon and in decline, the RACP Statement might portray a false trend that could influence society which tends to follow trends.

Cost savings to the health-care system?

There have been calls over the years for removal of routine circumcision from the Medicare schedule to save money.⁸⁹ However, previous cost-benefit analyses have shown no savings.^{90–92} Moreover, these analyses, some of which are now dated, did not consider the costs of other conditions such as cervical cancer, chlamydia, herpes, HIV, inflammatory dermatoses, phimosis and sexual problems in uncircumcised men and their partners. Clearly, not to circumcise represents a greater cost to the health care system than the cost of circumcision. It is also specious to argue that circumcision be delayed until the male can make his own decision. By the teen or later years the procedure is no longer as fast, simple, cheap or pain-free, and a general rather than a local anaesthetic is usually employed.

Recommendation on best time to perform circumcision

The RACP Statement fails to mention current practice or to recommend the best time to perform circumcision. Medicare statistics for the year to 2004 indicate 16,311 claims for circumcisions for infants aged <6 months (up from 14,560 in 1994).⁴⁸ For males aged ≥6 months there were 5,455 claims, of which 2,064 were for boys aged 6 months to 4 years. Thus most involve younger infants. As stated earlier, the actual rate is higher than Medicare claim data. Only physical examination would reveal this. Doing so in adults showed 62% of attendees at Sydney STI Centre were circumcised, being similar in older and younger men.⁹³ In Adelaide rate was 63% and 55%, respectively, in each,⁹⁴ and in Dunedin was 40% in a 1973 birth cohort.⁹⁵ Moreover, in contrast to the comment in the RACP's summary, it is for religious reasons in only 3% of cases.⁹³

Although the RACP Statement mentions that either a local or a general anaesthetic can be used, it fails to alert the reader to the latter being the norm after 6 months of age. Thus risk from general anaesthetic must be emphasised should circumcision be delayed.

Technique

Curiously, even though circumcision in the newborn period is more common than later, the Statement only discusses the

free-hand or sleeve-resection technique used in older children – including mention of sutures, blood vessels, etc. It is imperative that the relatively easy methods used for newborn circumcision are included, i.e. the Plastibell, Gomco and Mogen procedures. Training in these, as well as safe, easy, effective local anaesthetic methods⁹⁶ involving EMLA cream, dorsal penile nerve block or ring block is imperative. Vigilance for abnormal anatomy or bleeding disorders, necessitating referral to a paediatric urologist, should also be mentioned.

Conclusions

The RACP Policy Statement on circumcision is marred by many serious errors. Far more accurate accounts can be found in recent extensive reviews^{97,98} and credible websites, such as by the former AAP Task Force Chair.⁹⁹ There are so many benefits of circumcision^{71,77,97,98} that the RACP should be taking a leadership role in promoting awareness of these, as well as fostering good surgical technique in conjunction with the RACS. Just as with childhood immunization there is an overall benefit to public health and individual well-being accompanied by a very low risk of any serious adverse consequence (Table 1). Parents also have a legal right to authorise it.

Thus, to summarise, the RACP's 'Where we stand: Paediatric policy on circumcision' is misleading, inaccurate and, in places, incorrect. It amounts to thinly disguised propaganda. A new Statement that has as its basis evidence-based medicine, not lip service to the same, needs to be produced as a matter of urgency to assist medical practitioners in giving accurate advice to parents, as well as in clinical decision-making. The Statement should contain a conclusion that we the authors see as being in harmony with the medical literature: "The net benefits of routine infant male circumcision in prevention of a wide range of medical and health problems over the lifetime, together with the small risks associated with this procedure, should be explained by medical practitioners to all parents of infant boys in order to assist them in arriving at an informed decision about what is best for their newborn son".

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