

Cultural Bias in the AAP's 2012 Technical Report and Policy Statement on Male Circumcision

abstract

FREE

The American Academy of Pediatrics recently released its new Technical Report and Policy Statement on male circumcision, concluding that current evidence indicates that the health benefits of newborn male circumcision outweigh the risks. The technical report is based on the scrutiny of a large number of complex scientific articles. Therefore, while striving for objectivity, the conclusions drawn by the 8 task force members reflect what these individual physicians perceived as trustworthy evidence. Seen from the outside, cultural bias reflecting the normality of nontherapeutic male circumcision in the United States seems obvious, and the report's conclusions are different from those reached by physicians in other parts of the Western world, including Europe, Canada, and Australia. In this commentary, a different view is presented by non-US-based physicians and representatives of general medical associations and societies for pediatrics, pediatric surgery, and pediatric urology in Northern Europe. To these authors, only 1 of the arguments put forward by the American Academy of Pediatrics has some theoretical relevance in relation to infant male circumcision; namely, the possible protection against urinary tract infections in infant boys, which can easily be treated with antibiotics without tissue loss. The other claimed health benefits, including protection against HIV/AIDS, genital herpes, genital warts, and penile cancer, are questionable, weak, and likely to have little public health relevance in a Western context, and they do not represent compelling reasons for surgery before boys are old enough to decide for themselves. *Pediatrics* 2013;131:796–800

Circumcision rates are steadily decreasing in most Western countries around the world, including the United States.¹ Still, a majority of newborn male infants undergo the procedure in the United States. In its newly released Technical Report and Policy Statement on male circumcision,^{2,3} the American Academy of Pediatrics (AAP) has changed from a neutral to a more positive attitude toward circumcision, claiming that possible health benefits now outweigh the risks and possible negative long-term consequences. The AAP does not recommend routine circumcision of all infant boys as a public health measure but asserts that the benefits of the procedure are sufficient to warrant third-party payment. In Europe, Canada, and Australia, where infant male circumcision is considerably less common than in the United States, the AAP report is unlikely to influence circumcision practices because the conclusions of the report and policy statement seem to be strongly culturally biased.

AUTHORS: Morten Frisch, MD, PhD,^a Yves Aigrain, MD, PhD,^b Vidmantas Barauskas, MD, PhD,^c Ragnar Bjarnason, MD, PhD,^d Su-Anna Boddy, MD,^e Piotr Czauderna, MD, PhD,^f Robert P.E. de Gier, MD,^g Tom P.V.M. de Jong, MD, PhD,^h Günter Fasching, MD,ⁱ Willem Fetter, MD, PhD,^j Manfred Gahr, MD,^k Christian Graugaard, MD, PhD,^l Gorm Greisen, MD, PhD,^m Anna Gunnarsdottir, MD, PhD,ⁿ Wolfram Hartmann, MD,^o Petr Havranek, MD, PhD,^p Rowena Hitchcock, MD,^q Simon Huddart, MD,^r Staffan Janson, MD, PhD,^s Poul Jaszczak, MD, PhD,^t Christoph Kupferschmid, MD,^u Tuija Lahdes-Vasama, MD,^v Harry Lindahl, MD, PhD,^w Noni MacDonald, MD,^x Trond Markestad, MD,^y Matis Märton, MD, PhD,^z Solveig Marianne Nordhov, MD, PhD,^{aa} Heikki Pälve, MD, PhD,^{bb} Aigars Petersons, MD, PhD,^{cc} Feargal Quinn, MD,^{dd} Niels Qvist, MD, PhD,^{ee} Thrainn Rosmundsson, MD,^{ff} Harri Saxen, MD, PhD,^{gg} Olle Söder, MD, PhD,^{hh} Maximilian Stehr, MD, PhD,ⁱⁱ Volker C.H. von Loewenich, MD,^{jj} Johan Wallander, MD, PhD,^{kk} and Rene Wijnen, MD, PhD^{ll}

^aDepartment of Epidemiology Research, Statens Serum Institut, Copenhagen and Center for Sexology Research, Department of Clinical Medicine, Aalborg University, Aalborg, Denmark;

^bDepartment of Pediatric Surgery, Hôpital Necker Enfants Malades, Université Paris Descartes, Paris, France; ^cLithuanian Society of Paediatric Surgeons, Kaunas, Lithuania; ^dDepartment of Pediatrics, Landspítali University Hospital, Reykjavik, Iceland; ^eChildren's Surgical Forum of the Royal College of Surgeons of England, London, United Kingdom; ^fPolish Association of Pediatric Surgeons, Gdansk, Poland; ^gWorking Group for Pediatric Urology, Dutch Urological Association, Utrecht, Netherlands;

^hDepartments of Pediatric Urology, University Children's Hospitals UMC Utrecht and AMC Amsterdam, Netherlands; ⁱAustrian Society of Pediatric and Adolescent Surgery, Klagenfurt, Austria;

^jPaediatric Association of the Netherlands, Utrecht, Netherlands;

^kGerman Academy of Paediatrics and Adolescent Medicine, Berlin, Germany; ^lCenter for Sexology Research, Department of Clinical Medicine, Aalborg University, Aalborg, Denmark;

^mDepartment of Pediatrics, Rigshospitalet, Copenhagen, Denmark; ⁿDepartments of Pediatric Surgery, Landspítali University Hospital, Reykjavik, Iceland, and Karolinska University Hospital, Stockholm, Sweden; ^oGerman Association of Pediatricians, Cologne, Germany; ^pDepartment of Pediatric Surgery, Thomayer Hospital, Charles University, Prague, Czech Republic; ^qBritish Association of Paediatric Urologists, London, United Kingdom;

(Continued on last page)

In this commentary, a different view is presented by non-US-based physicians and representatives of general medical associations and societies for pediatrics, pediatric surgery, and pediatric urology in Northern Europe.

CRITERIA FOR PREVENTIVE MEDICINE

It is commonly accepted that medical procedures always need to be justified because of their invasive nature and possible damaging effects. Preventive medical procedures need more and stricter justification than do therapeutic medical procedures, as they are aimed at people who are generally free of medical problems. Even stricter criteria apply for preventive medical procedures in children, who cannot weigh the evidence themselves and cannot legally consent to the procedure.⁴

The most important criteria for the justification of medical procedures are necessity, cost-effectiveness, subsidiarity, proportionality, and consent. For preventive medical procedures, this means that the procedure must effectively lead to the prevention of a serious medical problem, that there is no less intrusive means of reaching the same goal, and that the risks of the procedure are proportional to the intended benefit. In addition, when performed in childhood, it needs to be clearly demonstrated that it is essential to perform the procedure before an age at which the individual can make a decision about the procedure for him- or herself.

The AAP technical report points to 4 health-related arguments in favor of circumcision: the reduced risks of urinary tract infections (UTIs), penile cancer, some traditional sexually transmitted diseases (STDs), and HIV infection and AIDS.

URINARY TRACT INFECTIONS

According to the literature reviewed, ~1% of boys will develop a UTI within the first years of life.² There are no randomized controlled trials (RCTs) linking UTIs to circumcision status. The evidence for clinically significant protection is weak, and with easy access to health care, deaths or long-term negative medical consequences of UTIs are rare. UTI incidence does not seem to be lower in the United States, with high circumcision rates compared with Europe with low circumcision rates, and the AAP report suggests it will take ~100 circumcisions to prevent 1 case of UTI. Using reasonable European estimates cited in the AAP report for the frequency of surgical and postoperative complications (~2%), for every 100 circumcisions, 1 case of UTI may be prevented at the cost of 2 cases of hemorrhage, infection, or, in rare instances, more severe outcomes or even death.

Circumcision fails to meet the criteria to serve as a preventive measure for UTI, even though this is the only 1 of the AAP report's 4 most favored arguments that has any relevance before the boy gets old enough to decide for himself.

PENILE CANCER

Penile cancer is 1 of the rarest forms of cancer in the Western world (~1 case in 100 000 men per year), almost always occurring at a later age. When diagnosed early, the disease generally has a good survival rate. According to the AAP report,² between 909 and 322 000 circumcisions are needed to prevent 1 case of penile cancer. Penile cancer is linked to infection with human papillomaviruses,⁵ which can be prevented without tissue loss through condom use and prophylactic vaccination. It is

remarkable that incidence rates of penile cancer in the United States, where ~75% of the non-Jewish, non-Muslim male population is circumcised,¹ are similar to rates in northern Europe, where ≤10% of the male population is circumcised.⁶

As a preventive measure for penile cancer, circumcision also fails to meet the criteria for preventive medicine: the evidence is not strong; the disease is rare and has a good survival rate; there are less intrusive ways of preventing the disease; and there is no compelling reason to deny boys their legitimate right to make their own informed decision when they are old enough to do so.

TRADITIONAL STDs

According to the AAP report,² there is evidence that circumcision provides protection against 2 common viral STDs: genital herpes and genital warts. However, the evidence in favor of this claim is based primarily on findings in RCTs conducted among adult men in sub-Saharan Africa. For other STDs, such as syphilis, gonorrhea, and chlamydia, circumcision offers no convincing protection. The authors of the AAP report forget to stress that responsible use of condoms, regardless of circumcision status, will provide close to 100% reduction in risk for any STD. In addition, STDs occur only after sexual debut, which implies that the decision of whether to circumcise can be postponed to an age when boys are old enough to decide for themselves.

HIV AND AIDS

From a public health perspective, what seems to be the AAP technical report's most important argument is that circumcision may reduce the burden of heterosexually transmitted HIV

infections in the United States.² Three RCTs in Kenya, Uganda, and South Africa suggest that circumcision in adulthood may lead to a noticeable reduction in risk of heterosexual HIV acquisition in areas with extremely high HIV prevalence.^{7–9} Specifically, the African RCTs seemed to show that adult male circumcision halves heterosexual men's (but not women's) risk of HIV infection in the first few years after the operation from 2.49% to 1.18% in high-endemic areas where viral transmission occurs mainly through heterosexual intercourse. This evidence, however, is contradicted by other studies, which show no relationship between HIV infection rates and circumcision status.¹⁰

However, there is no evidence that circumcision, whether in infancy, childhood, or adulthood, is effective in preventing heterosexual transmission in countries where HIV prevalence is much lower and routes of transmission are different, such as Europe and the United States. Sexually transmitted HIV infections in the West occur predominantly among men who have sex with men, and there is no evidence that circumcision offers any protection against HIV acquisition in this group.^{11,12}

The African findings are also not in line with the fact that the United States combines a high prevalence of STDs and HIV infections with a high percentage of routine circumcisions. The situation in most European countries is precisely the reverse: low circumcision rates combined with low HIV and STD rates. Therefore, other factors seem to play a more important role in the spread of HIV than circumcision status. This finding also suggests that there are alternative, less intrusive, and more effective ways of preventing HIV than circumcision, such as consistent use of condoms, safe-sex programs, easy access to

antiretroviral drugs, and clean needle programs.

As with traditional STDs, sexual transmission of HIV occurs only in sexually active individuals. Consequently, from an HIV prevention perspective, if at all effective in a Western context, circumcision can wait until boys are old enough to engage in sexual relationships. Boys can decide for themselves, therefore, whether they want to get circumcised to obtain, at best, partial protection against HIV or rather remain genitally intact and adopt safe-sex practices that are far more effective.

As with the other possible benefits, circumcision for HIV protection in Western countries fails to meet the criteria for preventive medicine: there is no strong evidence for effectiveness and other, more effective, and less intrusive means are available. There is also no compelling reason why the procedure should be performed long before sexual debut; sexually transmitted HIV infection is not a relevant threat to children.

COMPLICATIONS

As mentioned in the AAP report,² the precise risk and extent of complications of circumcision are unknown. It is clear, however, that infections, hemorrhages, meatal strictures, and other problems do occur. Incidental deaths and (partial) amputations of the penis have also been reported, but exact figures are not available. Although some studies suggest that circumcision can lead to psychological, pain-related, and sexual problems later in life,^{13–15} population-based prospective studies of long-term psychological, sexual, and urological effects of circumcision are lacking.

It seems that the authors of the AAP report consider the foreskin to be

a part of the male body that has no meaningful function in sexuality. However, the foreskin is a richly innervated structure that protects the glans and plays an important role in the mechanical function of the penis during sexual acts.^{16–20} Recent studies, several of which were not included in the AAP report (although they were published within the inclusion period of 1995–2010), suggest that circumcision desensitizes the penis^{21,22} and may lead to sexual problems in circumcised men and their partners.^{23–29} In light of these uncertainties, physicians should heed the precautionary principle and not recommend circumcision for preventive reasons.

CONCLUSIONS

The AAP's extensive report² was based on the scrutiny of a large number of complex scientific articles. Therefore, while striving for objectivity, the conclusions drawn by the 8 task force members reflect what these individual physicians perceived as trustworthy evidence. Cultural bias reflecting the normality of nontherapeutic male circumcision in the United States seems obvious. The conclusions of the AAP Technical Report and Policy Statement are far from those reached by physicians in most other Western countries. As mentioned, only 1 of the aforementioned arguments has some theoretical relevance in relation to infant male circumcision; namely, the questionable argument of UTI prevention in infant boys. The other claimed health benefits are also questionable, weak, and likely to have little public health relevance in a Western context, and they do not represent compelling reasons for surgery before boys are old enough to decide for themselves. Circumcision fails to meet the commonly accepted criteria for the justification of preventive medical procedures in children.

The cardinal medical question should not be whether circumcision can prevent disease, but how disease can best be prevented.

The AAP report² lacks a serious discussion of the central ethical dilemma with, on 1 side, parents' right to act in the best interest of the child on the basis of cultural, religious, and health-related beliefs and wishes and, on the other side, infant boys' basic right to

physical integrity in the absence of compelling reasons for surgery. Physical integrity is 1 of the most fundamental and inalienable rights a child has. Physicians and their professional organizations have a professional duty to protect this right, irrespective of the gender of the child.

There is growing consensus among physicians, including those in the United States, that physicians should

discourage parents from circumcising their healthy infant boys because non-therapeutic circumcision of underage boys in Western societies has no compelling health benefits, causes postoperative pain, can have serious long-term consequences, constitutes a violation of the United Nations' Declaration of the Rights of the Child, and conflicts with the Hippocratic oath: *primum non nocere*: First, do no harm.

REFERENCES

- World Health Organization, Department of Reproductive Health and Research and Joint United Nations Programme on HIV/AIDS (UNAIDS). *Male Circumcision. Global Trends and Determinants of Prevalence, Safety and Acceptability*. Geneva, Switzerland: World Health Organization; 2007
- American Academy of Pediatrics Task Force on Circumcision. Male circumcision. *Pediatrics*. 2012;130(3). Available at: www.pediatrics.org/cgi/content/full/130/3/e756
- American Academy of Pediatrics Task Force on Circumcision. Circumcision policy statement. *Pediatrics*. 2012;130(3):585–586
- BMA Ethics Committee. *Consent, Rights and Choices in Health Care for Children and Young People*. London, United Kingdom: BMJ Books, Wiley; 2000
- Backes DM, Kurman RJ, Pimenta JM, Smith JS. Systematic review of human papillomavirus prevalence in invasive penile cancer. *Cancer Causes Control*. 2009;20(4):449–457
- Parkin DM, Whelan SL, Ferlay JLT, Thomas DB. *Cancer Incidence in Five Continents*. Vol VIII. Lyon: IARC Scientific Publications, No 155. Lyon, France: International Agency for Research on Cancer; 2002
- Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, Puren A. Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial [published correction appears in *PLoS Med*. 2006;3:e298]. *PLoS Med*. 2005;2(11):e298
- Gray RH, Kigozi G, Serwadda D, et al. Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. *Lancet*. 2007;369(9562):657–666
- Bailey RC, Moses S, Parker CB, et al. Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial. *Lancet*. 2007;369(9562):643–656
- Boyle GJ, Hill G. Sub-Saharan African randomised clinical trials into male circumcision and HIV transmission: methodological, ethical and legal concerns. *J Law Med*. 2011;19(2):316–334
- Sánchez J, Sal Y, Rosas VG, Hughes JP, et al. Male circumcision and risk of HIV acquisition among MSM. *AIDS*. 2011;25(4):519–523
- Millett GA, Flores SA, Marks G, Reed JB, Herbst JH. Circumcision status and risk of HIV and sexually transmitted infections among men who have sex with men: a meta-analysis. *JAMA*. 2008;300(14):1674–1684
- Boyle GJ, Bensley GA. Adverse sexual and psychological effects of male infant circumcision. *Psychol Rep*. 2001;88(3 pt 2):1105–1106
- Goldman R. The psychological impact of circumcision. *BJU Int*. 1999;83(suppl 1):93–102
- Taddio A, Katz J, Illersich AL, Koren G. Effect of neonatal circumcision on pain response during subsequent routine vaccination. *Lancet*. 1997;349(9052):599–603
- Moldwin RM, Valderrama E. Immunohistochemical analysis of nerve distribution patterns within prepuce tissue [abstract]. *J Urol*. 1989;141(4 pt 2):499A
- Podnar S. Clinical elicitation of the penile-cavernosus reflex in circumcised men. *BJU Int*. 2012;109(4):582–585
- Taylor JR, Lockwood AP, Taylor AJ. The prepuce: specialized mucosa of the penis and its loss to circumcision. *Br J Urol*. 1996;77(2):291–295
- Tuncali D, Bingul F, Talim B, Surucu S, Sahin F, Aslan G. Histologic characteristics of the human prepuce pertaining to its clinical behavior as a dual graft. *Ann Plast Surg*. 2005;54(2):191–195
- Wu ZM, Chen YF, Qiu PN, Ling SC. Correlation between the distribution of SP and CGRP immunopositive neurons in dorsal root ganglia and the afferent sensation of preputial frenulum. *Anat Rec (Hoboken)*. 2011;294(3):479–486
- Smith DK, Taylor A, Kilmarx PH, et al. Male circumcision in the United States for the prevention of HIV infection and other adverse health outcomes: report from a CDC consultation. *Public Health Rep*. 2010;125(suppl 1):72–82
- Yang DM, Lin H, Zhang B, Guo W. Circumcision affects glans penis vibration perception threshold [in Chinese]. *Zhonghua Nan Ke Xue*. 2008;14(4):328–330
- Cortés-González JR, Arratia-Maqueo JA, Gómez-Guerra LS. Does circumcision have an effect on female's perception of sexual satisfaction [in Spanish]? *Rev Invest Clin*. 2008;60(3):227–230
- Fink KS, Carson CC, DeVellis RF. Adult circumcision outcomes study: effect on erectile function, penile sensitivity, sexual activity and satisfaction. *J Urol*. 2002;167(5):2113–2116
- Frisch M, Lindholm M, Grønbaek M. Male circumcision and sexual function in men and women: a survey-based, cross-sectional study in Denmark. *Int J Epidemiol*. 2011;40(5):1367–1381

26. Kim D, Pang MG. The effect of male circumcision on sexuality. *BJU Int.* 2007;99(3): 619–622
27. Shen Z, Chen S, Zhu C, Wan Q, Chen Z. Erectile function evaluation after adult circumcision [in Chinese]. *Zhonghua Nan Ke Xue.* 2004;10 (1):18–19
28. Sorrells ML, Snyder JL, Reiss MD, et al. Fine-touch pressure thresholds in the adult penis. *BJU Int.* 2007;99(4):864–869
29. Tang WS, Khoo EM. Prevalence and correlates of premature ejaculation in a primary care setting: a preliminary cross-sectional study. *J Sex Med.* 2011;8(7): 2071–2078

(Continued from first page)

^rBritish Association of Paediatric Surgeons, London, United Kingdom; ^sCommittee on Ethics and Children's Rights, Swedish Paediatric Society, Stockholm, Sweden; ^tEthics Committee of the Danish Medical Association, Copenhagen, Denmark; ^uEthics Committee of the German Academy of Pediatrics and Adolescent Medicine, Berlin, Germany; ^vFinnish Association of Pediatric Surgeons, Tampere, Finland; ^wDepartment of Pediatric Surgery, Helsinki University Children's Hospital, Helsinki, Finland; ^xDepartment of Pediatrics, IWK Health Centre, Dalhousie University, Halifax, Nova Scotia, Canada; ^yEthics Committee of the Norwegian Medical Association, Oslo, Norway; ^zEstonian Society of Paediatric Surgeons, Tallinn, Estonia; ^{aa}Norwegian Paediatric Association, Tromsø, Norway; ^{bb}Finnish Medical Association, Helsinki, Finland; ^{cc}Latvian Association of Pediatric Surgeons, Riga, Latvia; ^{ad}Department of Pediatric Surgery, Our Lady's Children's Hospital, Dublin, Ireland; ^{ae}Department of Surgery, Odense University Hospital, Odense, Denmark; ^{af}Department of Pediatric Surgery, Landspítali University Hospital, Reykjavik, Iceland; ^{ag}Department of Pediatrics, Helsinki University Children's Hospital, Helsinki, Finland; ^{ah}Swedish Pediatric Society, Stockholm, Sweden; ^{ai}Department of Pediatric Surgery, Dr. v. Haunersches Kinderspital, Ludwig-Maximilians Universität, Munich, Germany; ^{aj}Commission for Ethical Questions, German Academy of Pediatrics, Frankfurt, Germany; ^{ak}Swedish Society of Pediatric Surgery, Stockholm, Sweden; and ^{al}Dutch Society of Pediatric Surgery, Rotterdam, Netherlands

KEY WORDS

AIDS, HIV infection, male circumcision, penile carcinoma, sexually transmitted disease, urinary tract infection

ABBREVIATIONS

AAP—American Academy of Pediatrics
 RCT—randomized controlled trials
 STD—sexually transmitted disease
 UTI—urinary tract infection

Opinions expressed in these commentaries are those of the author and not necessarily those of the American Academy of Pediatrics or its Committees.

www.pediatrics.org/cgi/doi/10.1542/peds.2012-2896

doi:10.1542/peds.2012-2896

Accepted for publication Jan 3, 2013

Address correspondence to Morten Frisch, MD, PhD, Statens Serum Institut, Department of Epidemiology Research, 5 Artillerivej, Copenhagen S, DK-2300 Denmark. E-mail: mfr@ssi.dk

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2013 by the American Academy of Pediatrics

FINANCIAL DISCLOSURE: Dr MacDonald declares World Health Organization advisor and consultant work on vaccines and vaccine safety; the other authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: No external funding.

COMPANION PAPER: A companion to this article can be found on page 801, and online at www.pediatrics.org/cgi/doi/10.1542/peds.2013-0081.

Cultural Bias in the AAP's 2012 Technical Report and Policy Statement on Male Circumcision

Morten Frisch, Yves Aigrain, Vidmantas Barauskas, Ragnar Bjarnason, Su-Anna Boddy, Piotr Czauderna, Robert P.E. de Gier, Tom P.V.M. de Jong, Günter Fasching, Willem Fetter, Manfred Gahr, Christian Graugaard, Gorm Greisen, Anna Gunnarsdottir, Wolfram Hartmann, Petr Havranek, Rowena Hitchcock, Simon Huddart, Staffan Janson, Poul Jaszczak, Christoph Kupferschmid, Tuija Lahdes-Vasama, Harry Lindahl, Noni MacDonald, Trond Markestad, Matis Märtson, Solveig Marianne Nordhov, Heikki Pälve, Aigars Petersons, Feargal Quinn, Niels Qvist, Thrainn Rosmundsson, Harri Saxen, Olle Söder, Maximilian Stehr, Volker C.H. von Loewenich, Johan Wallander and Rene Wijnen
Pediatrics originally published online March 18, 2013;

Updated Information & Services	including high resolution figures, can be found at: http://pediatrics.aappublications.org/content/early/2013/03/12/peds.2012-2896
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.aappublications.org/site/misc/Permissions.xhtml
Reprints	Information about ordering reprints can be found online: http://www.aappublications.org/site/misc/reprints.xhtml

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Cultural Bias in the AAP's 2012 Technical Report and Policy Statement on Male Circumcision

Morten Frisch, Yves Aigrain, Vidmantas Barauskas, Ragnar Bjarnason, Su-Anna Boddy, Piotr Czauderna, Robert P.E. de Gier, Tom P.V.M. de Jong, Günter Fasching, Willem Fetter, Manfred Gahr, Christian Graugaard, Gorm Greisen, Anna Gunnarsdottir, Wolfram Hartmann, Petr Havranek, Rowena Hitchcock, Simon Huddart, Staffan Janson, Poul Jaszczak, Christoph Kupferschmid, Tuija Lahdes-Vasama, Harry Lindahl, Noni MacDonald, Trond Markestad, Matis Märtson, Solveig Marianne Nordhov, Heikki Pälve, Aigars Petersons, Feargal Quinn, Niels Qvist, Thrainn Rosmundsson, Harri Saxen, Olle Söder, Maximilian Stehr, Volker C.H. von Loewenich, Johan Wallander and Rene Wijnen
Pediatrics originally published online March 18, 2013;

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/early/2013/03/12/peds.2012-2896>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 345 Park Avenue, Itasca, Illinois, 60143. Copyright © 2013 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN®

