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[One of the authors responds:]

We thank Heather Dean and associates for their thoughtful and thorough addition to the topic of microalbuminuria as it relates to children and adolescents with diabetes. As they have pointed out, our article¹ refers to the care of adults only.

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Décès suite à un implant cochléaire : pas un type b

Le décès de la personne de 12 ans dont il est question dans cet article est survenu dans notre région socio-sanitaire¹. Il ne s'agissait pas d'un type b, mais plutôt d'un type f, ceci ayant été confirmé par le Laboratoire de santé publique du Québec. Cette distinction mérite d'être faite dans le contexte où l'on suggère la vaccination contre

Haemophilus influenzae de toutes les personnes recevant un implant cochléaire, puisque les vaccins actuellement disponibles sont spécifiquement conçus pour protéger contre le type b, mais non contre le type f.

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Référence

- Wooltorton E. Cochlear implant recipients at risk for meningitis. *CMAJ* 2002;167(6):670.

Meningitis and cochlear implantation

Having read Eric Wooltorton's health alert about the possible association between cochlear implantation in children and meningitis,¹ I feel obliged — rather reluctantly — to strip off my robe, step over the turnbuckle and enter the fray.

When the situation described in the health alert came to light, most surgeons and implant companies studied the cases carefully and took responsible action. Every effort was made to avoid a circus atmosphere and instead to focus on eliminating the risks and continuing to offer safe implantation. Strong recommendations were made to vaccinate children, especially those at high risk, against *Streptococcus pneumoniae*. This is the real issue.

In coming to terms with the relation between cochlear implants and meningitis, we should not lose sight of the benefits of this technology. For many children, the cochlear implant is a marvel that has allowed them to attain or regain hearing and speech. The growing numbers of candidates for cochlear implants, at least in Canadian centres, reflects a conservative application of this technology based on the responsible evaluation of outcomes.

Let's look at the facts. The known risk of children acquiring meningitis is about 2.4 per 100 000,² but this risk is significantly greater among children with underlying anomalies of the tem-

poral bone.³ Similarly, in children with abnormal cochleae and in those who had meningitis before implantation, the risk of meningitis after the implantation procedure is greater. Worldwide, 3 companies manufacture implants, but only one product was associated with a risk of meningitis significantly higher than the normal range in children with normal cochleae. This device requires a larger cochleostomy (the hole drilled into the cochlea for insertion of the electrode) than the others, and its design also requires a Silastic positioner to improve the physical contact between the electrode and the auditory nerve. The company quickly and responsibly stopped shipping the device in question, although it has now resumed shipping the product without the positioner.

When there were not enough implants available to treat all candidates, otolaryngologists, on behalf of their patients, made a case to government for additional funding. On the basis of the data presented, funding envelopes were expanded. Surely there is now enough evidence to justify universal coverage for pneumococcal vaccination. Several provinces (although not my own) already cover full courses of vaccination for all children. Elsewhere, the battle for universal vaccination should be waged aggressively by pediatricians, infectious disease experts and microbiologists, using the available data and without undue attention to the unfortunate turn of events described by Wooltorton.¹

Since I'm in the ring already, let me take a shot in a slightly different direction. In our own program, 28 children (9% of those treated to date) required implants specifically because they lost their hearing after a bout of meningitis. With all due respect to any child who has suffered this calamitous complication, postimplantation cases of meningitis are extremely rare. But just think how many children would be spared the need for cochlear implants to treat deafness caused by meningitis, and indeed how many children, with or without implants, would be spared the ordeal of meningitis itself (not to mention the expenses that society would avoid in

both these situations), if we just vaccinated them in the first place.

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2. Schuchat A, Robinson K, Wenger JD, Harrison LH, Farley M, Reingold AL, et al. Bacterial meningitis in the United States in 1995. Active Surveillance Team. *N Engl J Med* 1997;337:970-6.
3. Park AH, Kou B, Hotaling A, Azar-Kia B, Leonetti J, Papsin B. Clinical course of pediatric congenital inner ear malformations. *Laryngoscope* 2000;110(10 pt 1):1715-9.

[The author responds:]

I thank Yves Jalbert for pointing out the error in my recent Health and Drug Alert on the risk of meningitis for cochlear implant recipients:¹ the 12-year-old implant recipient in Quebec had meningitis caused by *H. influenzae* type f, not *H. influenzae* type b (Hib). Although neither the Canadian² nor the US³ advisory specified the type of *H. influenzae* involved, the US Food and Drug Administration (FDA) has recorded meningitis cases due to Hib (Nancy Pressley, FDA: personal communication, 2003), and both advisories included recommendations favouring universal vaccination against Hib. I echoed this recommendation because the prevention of meningitis in cochlear implant recipients is often just targeted secondary prevention. As Blake Papsin points out, many recipients of cochlear implants became deaf in the first place because of bacterial meningitis, so broader primary prevention efforts may be advisable.

Universal Hib vaccination has proven highly successful, reducing rates of serious Hib disease, including meningitis.^{4,5} I thank Papsin and others who have “wrestled” to expand funding for pneumococcal vaccine coverage for cochlear implant recipients. We can

only hope that aggressive “twisting of government arms” will soon lead to universal coverage of the cost of vaccination against common meningitis pathogens such as *S. pneumoniae*⁶ and *Neisseria meningitidis*.⁷

Eric Wooltorton

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6. Weir E. *Streptococcus pneumoniae* infection in children: vaccine implications. *CMAJ* 2002;166(2):220.
7. Weir E. Meningococcal disease: Oh no, not another childhood vaccine. *CMAJ* 2002;166(8):1064-6.

Corrections

In the recent Health and Drug Alert on the risk of meningitis for cochlear implant recipients,¹ the type of *H. influenzae* in the third Canadian case (in a 12-year-old child who subsequently died) was incorrectly listed as type b when in fact it was type f.

Reference

1. Wooltorton E. Cochlear implant recipients at risk for meningitis. *CMAJ* 2002;167(6):670.

In a recent letter,¹ the figure caption incorrectly identified a calcified right vertebral artery. The figure shows calcification in the sellar area.

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1. Parmar MS. Telephone stroke [letter]. *CMAJ* 2002;167(10):1104.

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