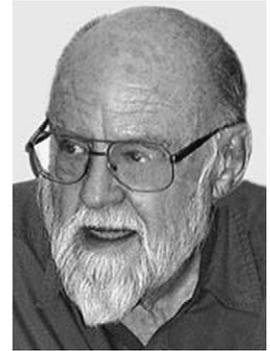


Editorial

Bilateral Cochlear Implantation

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The potential benefits of bilateral cochlear implants are being systematically documented. When both ears are implanted within a reasonably short time interval, there is accumulating evidence of improvement in ease of listening, speech perception, spatial localization, and speech understanding in the presence of background competition. Unfortunately, however, relatively simultaneous implantation of both ears is not universally practiced. For various reasons the time interval between implantation of the first ear and the second ear may range from months to years. How important is this temporal disparity in implantation. Is there a critical interval beyond which the benefits of the second implantation may be attenuated or lost?

In this issue of *JAAA*, investigators Alexandra P.F. Key, Heather L. Porter, and Tamala Bradham, of the Bill Wilkerson Center at Vanderbilt University School of Medicine, provide interesting findings bearing on this question. Using both behavioral and electrophysiological (ERP) measures, they studied a child who had received her first cochlear implant at age 2 yr, 4 mo and her second implant more than 4 yr later, at age 6 yr, 8 mo. Extensive testing was carried out prior to activation of the second implant and at postactivation

intervals of 2, 4, and 6 mo. The authors asked whether auditory processing was improved by this late onset implantation, and whether there was evidence of development of auditory processing skills over the 6 mo of study after the second unit had been implanted.

Behavioral measures showed little change for monosyllabic word recognition, but there was substantial improvement (41%) in the sentence recognition score at the 4 mo test session. ERP results were equally impressive. Despite the relatively long interval of near total deafness in the second ear, there was improvement in the morphology of the P1, N1, P2 complex for discrimination of place of articulation, and improvement in the morphology of the N400 component in response to a word-picture matching task.

These results lend strong support to the efficacy of second-ear cochlear implantation, even when there has been an extended period of time between the first- and second-ear implantations. In addition, they highlight the importance of extending the cochlear implant test battery to include more complex linguistic stimuli and tasks.

James Jerger
Editor-in-Chief