INITIAL SPEECH PERCEPTION RESULTS WITH THE NEW MULTIPEAK SPEECH PROCESSOR FOR THE 22-ELECTRODE COCHLEAR PROSTHESIS

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A new speech processor has been developed for the 22-electrode cochlear prosthesis by Cochlear Pty Ltd working in conjunction with the Department of Otolaryngology at the University of Melbourne. The new device, known as the MSP, combines smaller, more efficient hardware with a new speech coding scheme in an attempt to provide better speech perception in everyday environments for implant users. The MSP operates with the current implant device so there is no need for existing implantees to have revision surgery to make use of the new development. The multipeak speech coding scheme, which has been implemented in the MSP, provides information from three high frequency spectral bands, in addition to the parameters of voice pitch, amplitude and first and second formants which have been provided in the existing FOF1F2 coding scheme for the last four years. Initial speech perception results with research subjects have shown significant improvements in performance for the MSP over the older system (WSP III). The most encouraging result is that open-set speech perception in the presence of competing noise has improved substantially. For example, mean scores for BKB sentences in a 10 dB signal-to-noise ratio were 64% for the MSP and 31% for the WSP III. Further investigations have shown that both the hardware improvements and the new multipeak speech coding scheme have contributed significantly to the overall improvement in performance. Studies are continuing to analyse further the potential of the new system.

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