

IMPROVEMENTS IN SPEECH PROCESSING FOR THE NUCLEUS COCHLEAR IMPLANT

Cowan R.S.C., Dowell R.C., McDermott H.D., McKay C., & Clark G.M.

Human Communication Research Centre, Department of Otolaryngology, University of Melbourne & The Australian Bionic Ear and Hearing Research Institute, Melbourne, Australia

The Nucleus Cochlear implant allows a variety of multiple channel speech processing strategies to be developed and trialled. The initial strategy first developed by the University of Melbourne presented the second formant frequency as place and voicing as rate of stimulation. The strategy was subsequently improved by presenting the first formant on a place basis as well. Since that time the addition of more spectral information coded as place of stimulation and temporal information presented as variations in amplitude have resulted in better open-set CNC word and sentence scores for electrical stimulation alone. One of the improved strategies selects four pairs of electrodes from the 22 electrode array each glottal pulse to present the first and second formants as well as the output from two high frequency band pass filters. The other strategy stimulates six of the 22 electrodes representing the six maximal outputs from 16 bandpass filters. The clinical results have shown that both the above strategies results in better open-set speech perception for electrical stimulation in quiet and in noise. 80 % scores have been obtained for open-sets of CNC words and 90 % for open-sets of words in sentences for some of the patients using the latter strategy.



Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Cowan, Robert S. C.; Dowell, R. C.; McDermott, H. D.; McKay, C.; Clark, Graeme M.

Title:

Improvements in speech processing for the nucleus cochlear implant [Abstract]

Date:

1992

Citation:

Cowan, R. S. C., Dowell, R. C., McDermott, H. D., McKay, C., & Clark, G. M. (1992). Improvements in speech processing for the nucleus cochlear implant [Abstract]. In International Symposium - Cochlear Implants - New Perspectives, Toulouse.

Persistent Link:

<http://hdl.handle.net/11343/26868>

File Description:

Improvements in speech processing for the nucleus cochlear implant [Abstract]