

SPATIAL SPREAD OF NEURAL  
EXCITATION IN COCHLEAR  
IMPLANTS: COMPARISON OF  
MEASUREMENTS MADE USING NRT  
AND FORWARD MASKING



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*Notes...*

Recently developed technology allows intracochlear potentials to be measured in cochlear implant recipients, using telemetry. Neural response telemetry (NRT) enables the measurement of compound action potentials evoked by stimulation of cochlear implant electrodes. These objective measures can now be compared with related psychophysical measures in humans.

We will present data, from both NRT and forward masking, on spatial spread of neural excitation due to stimulation of cochlear implant electrodes. The response fields from more apical neurons will spread quite broadly to the sensing electrodes of an implanted array, resulting in misleadingly broad NRT estimates of the spatial spread of neural excitation. Forward masking, which might itself lay claims to some degree of "objectivity", will not suffer from this limitation. Comparison of data from the two measures will help to determine the limitations of NRT as a tool for measuring spatial spread of neural excitation.

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**Title:**

Spatial spread of neural excitation in cochlear implants: comparison of measurements made using NRT and forward masking [Abstract]

**Date:**

1998

**Citation:**

Cohen, L. T., Saunders, E., Cone-Wesson, B., & Clark, G. M. (1998). Spatial spread of neural excitation in cochlear implants: comparison of measurements made using NRT and forward masking [Abstract]. In Programme & Abstracts of First International Symposium & Workshop Objective Measures in Cochlear Implantation, Nottingham, UK.

**Persistent Link:**

<http://hdl.handle.net/11343/27037>

**File Description:**

Spatial spread of neural excitation in cochlear implants: comparison of measurements made using NRT and forward masking [Abstract]