

MUSIC IN THE BRAIN

Music In the Brain Guest Talk

DATE: Tuesday 27 August 2013
TIME: 11.00 - 12.00
PLACE: Meeting room, 8th floor, building 10, AUH, Nørrebrogade.

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Electrophysiological signatures of cortical plasticity in cochlear-implant users

Previous studies have shown that both sensory deprivation and cochlear implantation can induce cortical plasticity. However, it is not well understood how the deprivation-induced cortical reorganization affects the adaptation of the auditory cortex to the cochlear implant (CI) signal. To better understand the dynamics of cortical reorganization and its relation to the individual outcome with a CI, we designed a longitudinal study involving EEG recording sessions before and after cochlear implantation. We examined postlingually-deafened individuals and carefully matched normal-hearing listeners in a discrimination task with different frequency-modulated tones (auditory condition) and patterns of coherent motion (visual condition). The results revealed an enhancement of auditory discrimination ability over the period of one year following cochlear implantation. At the same time, CI users showed an increase of the N1 event-related potential (ERP) for the auditory condition, whereas the P1 ERP for the visual condition was smaller in CI users compared with normal-hearing listeners. Importantly, the amplitude of the visual ERP was inversely related to the speech recognition ability with a CI. Our results demonstrate a rapid adaptation of the auditory cortex in elderly CI recipients and indicate associations between changes in the visual and auditory modality during CI rehabilitation.



For **more information** about the guest talk, please contact Bjørn Petersen: bjorn@pet.auh.dk

ALL ARE WELCOME

