

Cochlear Implants and Brain Plasticity (Audiology and Neuro-Otology)



Special Topic Issue: Audiology and Neuro-Otology 2001, Vol. 6, No. 6 The ability to electrically stimulate the deafened auditory nerve in both humans and experimental animals provides a unique opportunity to study the relationship between neural activity and plasticity. The objective of the editors in producing this special issue has been to generate a timely review of this work. The first contribution reviews the pathological and atrophic changes that occur in the cochlea and auditory brainstem following a sensorineural hearing loss in experimental animals. In the following the trophic effects of re-afferentation following cochlear implantation are evaluated. Also the activity-dependent plastic response of the adult auditory brainstem following controlled cochlear lesions and the reactivation of this silenced pathway via cochlear implantation in an animal model is discussed. Another article addresses the theme of cortical maturation following a profound sensorineural hearing loss and cochlear implant use, and the final paper reviews human cortical plasticity following cochlea implantation using functional brain imaging techniques. This volume gives a survey on the re-afferentation of the deafened auditory system via a cochlear implant, and will stimulate the discussion in both basic and clinical research.

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Neurotology. Editorial. Cochlear Implants and Brain Plasticity. Shepherd R.K. Illing R.-B. Author affiliations. Melbourne **Translational Research in Audiology, Neuro-otology, and the - Google Books Result** Feb 15, 2002

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