New cases of sinusitis due to dematiaceous fungi are appearing regularly in the literature, making published lists rapidly outdated. The most frequent fungi that can be found in these cases are *Drechslera biseptata*, * Bipolaris spicifera*, *Bipolaris australiensis*, *Bipolaris hawaiiensis*, *Curvularia lunata* and *Alternaria* species. Phaeohyphomycotic sinusitis usually appears as an indolent disease that may remain confined to the sinus cavity or may spread to contiguous structures over months and years. Many patients have a long history of allergic rhinitis, nasal polyps, postnasal drip, recurrent bacterial sinusitis, or intermittent sinus pain. By the time nasal congestion and facial pain bring the patient to medical attention. On CT-scan ethmoid complex is most frequently involved. At surgery, the sinus cavity can be filled with a thick, tenacious, inspissated, dark mucus.

On the other hand, it seems that among patients suffering from a stubborn, long-lasting postnasal drip a considerable number of those showing no clinical sign suspected to mycotic infection can be found. The author selected a group of 37 patients and treated them by means of oral itraconasol. All of the patients suffered from postnasal drip that lasted more than 6 months. The X-rays showed typical veil-like shade over the paranasal sinuses. Skin tests and RAST values to *Dermatophagoides pteronyssinus* and house dust mite were negative in all of them. The antral lavage of both maxillary sinuses was positive in all of them. The antral lavage of both maxillary sinuses was positive. The treatment lasted for one month. Thirty out of 37 patients showed no recurrence of postnasal drip after the treatment. The results suggest the possibility of phaeohyphomycoses being an important causative factor in non-allergic patients suffering from postnasal drip. 

Key words: fungal sinusitis, postnasal drip, dematiaceous fungi, phaeohyphomycosis.

**COCHLEAR IMPLANT: CLINICAL & BASIC SCIENCES**

**SURVIVAL FACTORS THAT MAINTAIN AND INITIATE REGROWTH OF NEUROELEMENTS IN THE INNER EAR FOLLOWING DEAFNESS.**

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Following the loss of hair cells of the inner ear, the peripheral processes of the auditory nerve regress and spiral ganglion cells and their projections into the CNS degenerate. This loss of neural elements has important implications for the deaf candidate for cochlear implant since the benefits of inner ear prostheses correlates with the richness of the population surviving nerve fibers. Electrical stimulation of the auditory nerve following deafness has been shown to enhance survival. It has been suggested that the essential element of this survival is the initiation of propagated action potentials which may function directly as a survival factor or trigger an autocrine action causing a release of chemicals (e.g. neurotrophins) that then cause survival. Our studies have demonstrated that the enhancement of auditory nerve survival from cochlear electrical stimulation is blocked by chronically administered tetrodotoxin (TTX), thus supporting the view that evoked propagated action potentials are a direct or indirect survival factor in the deafened ear. It has also been observed that in the normal ear, the elimination of activity, with chronic TTX, does not result in degeneration. Thus, the elimination of this activity which acts as a survival factor, is not essential for survival in the inner ear. To test if there are other survival factors that may be important in maintaining nerve fibers, we have examined the effects of administration of neurotrophins in the deafened ear. Results indicate that brain derived neurotrophic factor (BDNF), neurotrophine 3 (NT-3), and a cocktail of substances, including CNTF, can enhance the survival of neural elements in the deafened ear and may initiate regrowth of peripheral processes following degeneration.

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**SPEECH PERCEPTION IN IMPLANTED CHILDREN: EFFECTS OF PREOPERATIVE RESIDUAL HEARING AND SPEECH PROCESSING STRATEGY**

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Since the first child was implanted with the Nucleus 22-channel cochlear prosthesis in Melbourne in 1985, the number of implanted children world-wide has rapidly expanded. Over this period, more effective paediatric assessment and management procedures have developed, allowing cochlear implants to be offered to children under the age of 2 years. In addition, a succession of improved speech processing strategies have been implemented in the Nucleus implant system, resulting in increased mean speech perception benefits for implanted adults. Research in the Melbourne and Sydney Cochlear Implant Clinics has also demonstrated that young children can adapt to and benefit from improved speech processing strategies such as the Speak strategy. Reported speech perception results for implanted children show that a considerable proportion (60%) of paediatric patients in the Melbourne and Sydney clinics are able to understand some open-set speech using electrical stimulation alone. These results, and the upward trend of speech perception benefits to improve over time with advances in speech processing, have raised questions as to whether severely, or severely-to-profoundly deaf children currently using hearing aids would in fact benefit more from a cochlear implant. To investigate the potential effect of the level of preoperative residual hearing on postoperative speech perception, results for all implanted children in the Melbourne and Sydney cochlear implant programs were analysed. Results showed that as a group, children with higher levels of preoperative residual hearing were consistently more likely to achieve open-set speech perception benefits. Potential factors in this finding could be higher levels of ganglion cell survival or greater patterning of the auditory pathways using conventional hearing aids prior to implantation. Conversely, children with the least preoperative residual hearing were less predictable, with some children achieving open-set perception, and others showing more limited closed-set benefits to perception. For these children, it is likely that preoperative residual hearing is of less significance than other factors in outcomes.
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