P061

AUDITORY IMPLANTS

# Cochlear nerve diameter and cochlear implant outcome in postlingual deaf adults

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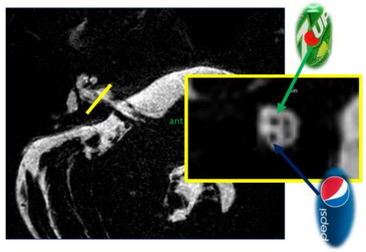
## Abstract

The outcome of cochlear implantation (CI) in postlingual deaf adults is highly variable and finding relevant prognostic factors is still of interest. There are a few papers in literature that describe a positive correlation between the size of cochlear nerve and CI outcome1,2.

Cochlear nerve size is commonly documented in comparison to the facial nerve in our routine preoperative magnetic resonance imaging (MRI). The study analyses the relationship between nerve size and postoperative speech perception scores.

The preliminary results suggest nerve insufficiency as a risk factor for poor CI outcome in adults and its relatively simple identification with the comparison method. Data collection is continues for a larger sample size and analysis of eventual confounding factors are necessary to increase our understanding.



## Résultats

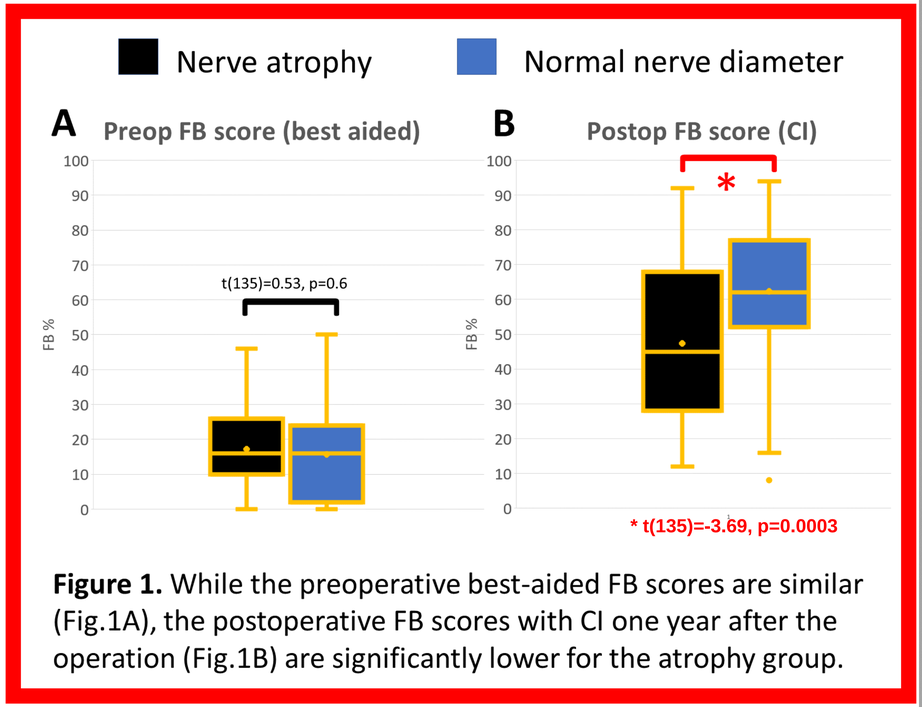
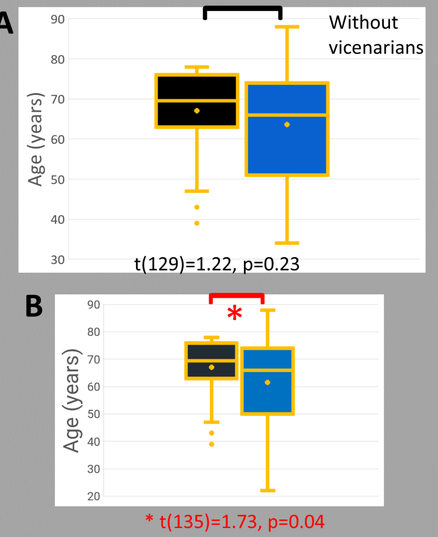



**Figure 1.** While the preoperative best-aided FB scores are similar (Fig.1A), the postoperative FB scores with CI one year after the operation (Fig.1B) are significantly lower for the atrophy group.

**Nerve atrophy = aging? Maybe not.**

**Figure 2.** The small but significant age difference between the groups (Fig.2B) *disappears* when vicenarians are excluded (Fig. 2A)




## Objectifs

The aim of the study is two-fold, to analyze the possible effect of cochlear nerve size to CI outcome and to determine if the simple comparison method can provide a prognostic factor.

## Conclusion

The preliminary results suggests nerve insufficiency as a risk factor for poor CI outcome in adults and its relatively simple identification with the comparison method. A larger sample size and analysis of eventual confounding factors are necessary to increase our understanding.

## Méthodes et Matériels

Cochlear nerve was described as atrophic if its size is smaller than the facial nerve at the sagittal slices of the internal auditory canal. The radiologists were blind to speech scores and the side of operation. The effect of nerve size on preoperative best aided and one-year post-operative speech perception (FB) scores are analyzed retrospectively (n=137) from our CI database. Except for age no other parameters were taken into account. None of the patients had inner ear malformations.

## Références

1Chung J et al. Biomed Res Int. 2018 2Eleftherios S et al. American Journal of Otolaryngology, 2020

19›22 September 2024
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