**Assessing cognitive function in elderly patients with Cochlear Implantation with RBANS-H adapted for hearing-impaired persons**

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**Background:**

Recently the independent relationship between hearing loss and cognitive decline in older adults has been studied. Only few studies assessed the effects of cochlear implantation on the cognitive evolution in patients with severe to profound hearing loss, and no data are available on patients with residual hearing loss treated with electric acoustic stimulation (EAS).

**Aim:**

To develop and adapt a cognitive test that is not influenced by hearing loss and to compare the cognitive status of CI and EAS patients before and after 6 months of implantation and with age-matched normal-for-age hearing persons.

**Method:**

The Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) was adapted for Hearing-impaired persons (RBANS-H) (Claes A. et al. Front. Neurosci. 10:512. doi: 10.3389/fnins.2016.00512). As a first approach, a cross-sectional RBANS-H test analysis of CI patients was performed and the scores obtained before surgery and after 6 months. Their auditory capabilities were correlated with the RBANS-H scores. A second study consisted of a prospective cohort from preoperatieve cognitive functioning till 12 months post-CI surgery.

**Results:**

Test results of RBANS-H in CI and EAS patients show a significant lower score than age-matched normative data of normal-for-age hearing persons. This was significant for the total RBANS-H score and the domains immediate and delayed memory and attention. Preliminary results showed a correlation between RBANS-H scores and auditory capabilities. Furthermore, the results indicate that CI stopped the accelerated decay by age.

**Conclusion:**

Cognitive functioning in CI/EAS patients is lower than their age-matched normal-for-age hearing peers. Cognitive functioning is correlated with hearing capabilities.

**Biography:**

The Repeatable Battery for the Assessment of Neuropsychological Status for Hearing Impaired Individuals (RBANS-H) before and after Cochlear Implantation: A Protocol for a Prospective, Longitudinal Cohort Study.

[Claes AJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Claes%20AJ%5BAuthor%5D&cauthor=true&cauthor_uid=27895549), [Mertens G](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mertens%20G%5BAuthor%5D&cauthor=true&cauthor_uid=27895549), [Gilles A](https://www.ncbi.nlm.nih.gov/pubmed/?term=Gilles%20A%5BAuthor%5D&cauthor=true&cauthor_uid=27895549), [Hofkens-Van den Brandt A](https://www.ncbi.nlm.nih.gov/pubmed/?term=Hofkens-Van%20den%20Brandt%20A%5BAuthor%5D&cauthor=true&cauthor_uid=27895549), [Fransen E](https://www.ncbi.nlm.nih.gov/pubmed/?term=Fransen%20E%5BAuthor%5D&cauthor=true&cauthor_uid=27895549), [Van Rompaey V](https://www.ncbi.nlm.nih.gov/pubmed/?term=Van%20Rompaey%20V%5BAuthor%5D&cauthor=true&cauthor_uid=27895549), [Van de Heyning P](https://www.ncbi.nlm.nih.gov/pubmed/?term=Van%20de%20Heyning%20P%5BAuthor%5D&cauthor=true&cauthor_uid=27895549). [Front Neurosci.](https://www.ncbi.nlm.nih.gov/pubmed/27895549) 2016 Nov 15;10:512. doi: 10.3389/fnins.2016.00512

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