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Original Article

# Working-memory capacity and phonological processing in deafened adults and individuals with a severe hearing impairment

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## Abstract

The purpose of the present article is to review a number of studies conducted in our own laboratory with respect to working memory capacity and phonological processing in deafened adults and individuals with a severe hearing impairment, and how these two cognitive components relate to speech processing. The results demonstrate that one specific component in the phonological processing system (i.e., the phonological representation system) is deteriorating, whereas other parts are preserved intact. The characteristic of the individual's phonological representation is further correlated with success in speech reading and speech understanding with some cochlear implant systems. Working memory capacity is a capacity that remains intact despite a long duration of deafness/severe hearing loss. The size of the working memory is related to

skill in speech reading and level of speech understanding with cochlear implants and perceived effort in a noisy environment.

Key Words:

Phonological processing | Working memory | Cochlear implants | Speech perception | Speech understanding

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