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Auditory, cognitive, and linguistic processing skills in individuals with hearing loss

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Hearing impairment affects a person's ability to communicate effectively. People with hearing loss (HL) report difficulty communicating in noise, even when the HL is compensated by conventional amplification. This study aims to investigate factors that contribute to understanding speech in noise. Nine adults with HL and nine controls participated in the study. The test-battery include auditory, cognitive and linguistic tests. For the HL group, auditory stimuli were filtered with NAL-RP prescription to compensate for their HL. Results indicate a significant difference in performance between the groups on the Modulation Detection Threshold (MDT) test [$F(1, 15) = 3.24, p = 0.04$] and the speech recognition in noise test [$f(1, 15) = 25.6, p < 0.001$]. HL group performed better on the MDT and poorer at recognising speech in noise possibly due to broadening of auditory filters. With the broadened auditory filters in mind, this result supports the fact that they would have poor frequency specificity, detrimental for speech recognition. HL group performed better than the control group on the cognitive spare capacity test [$f(1, 15) = 4.72, p = 0.04$]. Preliminary data suggests that adults with HL may compensate for hearing-related difficulties in certain situations by using their cognitive skills.

Topics

[Speech communication](#), [Auditory perception](#), [Hearing impairment](#), [Speech recognition](#), [Acoustic filters](#), [Batteries](#)

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