Abstract DGA 2012

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Sprachaudiometrie II.

Measuring listening effort with digits in noise

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Objective: The purpose of this study is to determine if it is possible to measure listening effort for intelligible speech with triplets of spoken digits.

Design:

We added various amounts of stationary noise to digit triplets and measured its influence on the reaction time for two tasks. In the first task, participants had to quickly identify the last digit of a triplet. In the second task they had to quickly add the first and the last digit.

Study Sample:

Twelve normal-hearing participants.

Results:

Response time increases with lower (i.e. worse) signal to noise ratios for both tasks. The response time on the arithmetic is more influenced by the noise than the response time on the identification task, but the arithmetic task has a higher variance.

Conclusions:

Listening effort can be measured with digit triplets at signal in noise ratio's at which speech is highly intelligible. The optimal task may depend on the signal to noise ratio that is of interest. The potential audiological application (evaluating hearing aids and their signal processing) has yet to be studied. If positive, this listening effort test would fill a gap in the evaluation of assistive hearing devices when listening effort plays a role.