

**Hearing Industry Research Consortium (IRC):  
Lay Person Description of Project**

**Details**

Project Title: A dynamic speech comprehension task for assessing real-world listening ability and hearing aid benefit

Investigators: Virginia Best, Gitte Keidser, Jörg Buchholz, Katrina Freeston

Affiliation(s): The National Acoustic Laboratories, Australia (Virginia Best is now at Boston University, USA)

**Summary**

The goal of this project was to create a new laboratory test that simulates a realistic communication situation in which the listener has to follow a single person talking or a conversation between multiple people in a noisy restaurant, and measures how much the listener has *understood* and not just *heard*.

Our hopes were that this test would (a) give us a new way of measuring how well listeners with hearing loss cope in challenging real-world communication settings, (b) bring insight as to why some listeners have more trouble than others, and (c) be able to demonstrate the actual real-world benefit of hearing aids.

The new test, known as the National Acoustic Laboratories Dynamic Conversations Test (NAL-DCT) was developed by adapting passages and questions from the International English Language Testing System (IELTS; Cambridge University Press), a well-known test of English language proficiency. Audio recordings were made by Australian English “actors” and presented in a simulated noisy restaurant. Performance was based on how many questions a listener could answer correctly about each passage. We evaluated the test in 30 people with normal hearing and 41 people with hearing loss. We found that performance on the NAL-DCT is related to a person’s hearing loss but also to their cognitive abilities. We believe it is a powerful tool for estimating how well a particular listener can function in real-world communication settings. It also shows promise as a tool for predicting the real-life benefit of hearing aids. This information will inform the future development of hearing aid technology and could affect the way hearing rehabilitation is customised for the individual listener.

The NAL-DCT is available from the IRC for use by other interested researchers. Details about the development and evaluation of the test are available in the following publications:

V. Best, G. Keidser, K. Freeston and J. M. Buchholz (2016). A dynamic speech comprehension test for assessing real-world listening ability. *Journal of the American Academy of Audiology* 27(7):515-526.

V. Best, G. Keidser, K. Freeston and J. M. Buchholz (under review). Evaluation of the NAL Dynamic Conversations Test in older listeners with hearing loss. *International Journal of Audiology*.

### **Contact information**

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The National Acoustic Laboratories (NAL, <https://nal.gov.au/>) is the research arm of Australian Hearing and has been in operation since 1947. NAL's scientific investigations into hearing have been at the forefront of developments in several areas such as prescription procedures for hearing aids, outcome measures, diagnosis and remediation of auditory processing disorders, diagnostic electrophysiological techniques and longitudinal studies in children with hearing impairment.