

Practice Listening and Understanding Speech (PLUS): Two novel auditory-cognitive training programs for hearing-impaired listeners.

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Our research suggests that auditory training, using an adaptive phoneme discrimination task, results in significant improvements in speech perception and cognition for people with hearing loss (PHL) and for hearing aid (HA) users, and that these improvements are driven by refinements in higher order cognitive control. Furthermore, a recent meta-analysis shows the largest benefits to cognition for PHL may be achieved by combined auditory-cognitive training approaches.

Based on these previous findings we have developed two bespoke auditory-cognitive training programmes that target bottom-up refinement of sensory and cognitive skills (phoneme discrimination n-back training) and the top-down development of cognitive control for speech perception (2-talker competing speech training). Phoneme stimuli are those reported by Ferguson et al. (2014), presented within an n-back odd-one-out paradigm. Novel stimuli for competing speech training are based on challenging listening situations HA users encountered regularly as identified using the qualitative method Photovoice.

The training programs will be provided to first-time HA users across two UK National Health Service (NHS) audiology services to assess the feasibility of conducting a full-scale NHS multicentre RCT of intervention effectiveness and cost-effectiveness.

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