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**Fine-structure processing, frequency selectivity and speech
perception in hearing-impaired listeners**

Olaf Strelcyk and Torsten Dau

Centre for applied hearing research, Technical University of Denmark, DTU, Bygn. 352, 2800 Lyngby,
Denmark

Hearing-impaired people often experience great difficulty with speech communication when background noise is present, even if reduced audibility has been compensated for. Other impairment factors must be involved. In order to minimize confounding effects, the subjects participating in this study consisted of groups with homogeneous, symmetric audiograms. The perceptual listening experiments assessed the intelligibility of full-spectrum as well as low-pass filtered speech in the presence of stationary and fluctuating interferers, the individual's frequency selectivity and the integrity of temporal fine-structure processing. The latter was addressed in a binaural and a monaural experiment. In the binaural experiment, the lateralization threshold was measured for low-frequency tones with ongoing interaural phase delays. In the monaural experiment, detection thresholds for low-rate frequency modulation were obtained. In addition, these binaural and monaural thresholds were measured in a stationary background noise in order to assess the persistence of the fine-structure processing to interfering noise. Apart from elevated speech reception thresholds, the hearing impaired listeners showed poorer performance than the normally hearing in terms of frequency selectivity and fine-structure processing, despite normal audiometric thresholds at the test frequencies. However, the binaural fine-structure processing was not found to be particularly vulnerable to interfering noise in these listeners.