Abstract **345**, Date **1:00 pm Wednesday, February 26, 2003 (24 hours)**
Session **W3: Psychophysics: Loudness and Intensity Discrimination**

Intensity Difference Limens as a Function of Frequency and Level in Hearing-Impaired and Normal-Hearing Canaries

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In humans with cochlear damage, intensity difference limens (IDLs) are often smaller than in normal-hearing humans tested at equal sensation levels. At equal SPL levels, however, IDLs are more similar between hearing-impaired and normal-hearing listeners. The purpose of the present study was to investigate intensity discrimination in normal-hearing canaries and a strain of canary with a hereditary hearing loss involving damaged and missing hair cells, the Belgian Waterslager canary. This strain has been used in neurobiological and behavioral studies of song learning, as well as in hair cell regeneration studies, and has a permanent high-frequency hearing loss associated with hair cell abnormalities in the basilar papilla. IDLs were obtained from birds trained using standard operant conditioning procedures and the Method of Constant Stimuli. Birds were trained to respond to small increases in the intensity of repeating pure tones. Hearing-impaired birds had smaller IDLs at low frequencies than normal-hearing birds when tested at 75 dB SPL, but not at 60 dB SPL. Hearing-impaired birds also generally had smaller intensity difference limens at lower sensation levels than normal-hearing birds. Normal-hearing birds generally showed more change in threshold with increasing sensation level than hearing-impaired birds. In sum, these results in Belgian Waterslager canaries with abnormal basilar papillae are similar to those reported for humans with cochlear damage.

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