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Relationships Between Ambient Noise Levels and Vocal Effort when Working as a Restaurant Bartender

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Relationships Between Ambient Noise Levels and Vocal Effort when Working as a Restaurant Bartender

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Workers in many different fields depend upon their voice for job performance. Vocal load, the way a voice is used and how much it is used, increases as a function of the total time a voice is used and the intensity (“loudness”) of the voice. Speakers tend to increase pitch, intensity, and duration of speech in the presence of noise, known as the Lombard Effect, which can lead to greater vocal fold stress and subsequent complications. In addition to increased risk of vocal stress, high levels of ambient noise might put workers at risk of auditory damage. The National Institute for Occupational Safety and Health recommended noise exposure limit for workers is 85 dBA (8-hour time-weighted average, equaling 100% dose) (NIOSH, 1998). Restaurants have been shown to have average sound levels exceeding 90 dBA with maximum peak levels of up to 124 dB (Sadhra, Jackson, Ryder, Brown, 2002). Workers exposed to these conditions may be at risk for auditory and/or vocal health issues. The purpose of the current research was to assess the relationship between ambient noise levels and vocal effort in 5 bartenders working full shifts in a popular chain restaurant. Methods included using a throat contact accelerometer placed on the neck to measure vocal intensity, and a noise dosimeter placed on their shoulder to measure ambient noise levels. Some key findings were that 2/5 of my participants generated vocal intensities in excess of their comfortable vocal dynamic range, and ambient noise levels were found to exceed NIOSH recommended exposure limits. Workers exposed to these conditions need to be aware of the possible risk to vocal and hearing health.