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Genetic and Environmental Influences on Tinnitus over 12 years in Vietnam–Era Veteran Twins

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ABSTRACT:

Tinnitus has a higher prevalence in veteran and aging populations¹. There are few studies examining longitudinal genetic models of tinnitus², and no known studies have utilized a sample of aging male veterans. This poster will examine longitudinal ACE models for tinnitus in the Vietnam Era Twin Study of Aging. 468 MZ and 317 DZ male twin pairs self-reported tinnitus (yes or no) at mean ages of 56, 62, and 68 years. Longitudinal ACE twin models of tinnitus were generated to examine genetic and environmental influences over three time points (T1, T2, T3). Tetrachoric correlations for T1-T3 tinnitus were 0.78 from T1-T2, 0.80 from T2-T3, and 0.67 from T1-T3 (all $p < .001$). An AE model best fit the data; there was no evidence for the influence of shared environment on tinnitus. Additive genetic factors significantly accounted for 28.5%, 46.6%, and 44.3% of the variance at T1, T2, T3, respectively, with remaining variance attributed to non-shared environment. Full results from a trivariate model (including genetic correlations across times) will be included in the poster. Results indicate significant non-shared environmental and genetic influences on tinnitus over time. Most of the variance in tinnitus at age 56 is determined by unique environmental influences. However, there is a suggestion in these preliminary findings that genetic influences may become equally influential as subjects transition from middle to early old age.

References:

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