

Predicting noise fear in 12-month-old dogs with a test and questionnaire given at 3- and 12-months

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Noise-related anxiety disorders affect 50% of dogs across their lifetimes, and are highly co-morbid with and worsen other behavioural pathologies, which negatively affect cognitive ability. This results in a decreased quality of life for pet dogs, and an increased risk of euthanasia. This study aims to develop a method, in the form of a questionnaire and in-person noise test, to predict the risk of developing noise-related fear in the first year of life in dogs as young as 3 months old. Thirty-nine dogs were recruited to participate, and data from their first visit (3-months) was compared to their fourth visit (12-months). A 3.5-minute audio of various sounds (weather, streams, fireworks, gunshots, and rockets), with a maximum dBA of 81.3-93.2 dB was played, and recorded to analyze behavioural indicators of distress. 47% of dogs worsened (ANOVA ((1,3); $F = 18.91514$; $p = 0.0001$), Pearson correlation coefficient ($R = 0.48$, $p = 0.03$)) between their first and fourth visits when comparing behavioural indicators of distress over 15-second interval phases of the 3.5-minute audio. Dogs who worsened were also found in the WDQ-PET questionnaire to be more likely to respond negatively to sharp, intermittent, and continuous noise (Chi-Square (1,36), = 3.9009, $p = 0.048$), 2-wheeled moving vehicles (T-test ($t = 2.25052$, $p = 0.03$), Cohen's d ((1.47-0.91)/0.933809 = 0.60)), and to owner absence (T-test ($t = 2.11047$, $p = 0.04$); Z test for proportions ($Z = 2.0248$, $p = 0.02$), Chi-square test (Chi-square statistics = 4.098, $p = 0.04$)). By understanding that dogs who worsened between visits also showed negative reactions toward these different scenarios, it may be possible to develop a method to predict noise-related fear in dogs at 3-months old using a standardized questionnaire and test. This would allow for early intervention, a key component to the successful treatment.

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