

Assessing use of a visual tracking test and questionnaire for predicting abnormal behavioral development in puppies.

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Abstract: Highly problematic behaviors such as aggressive behaviors, fearful or anxious behaviors, and hyperactive or impulsive behaviors have a prevalence as high as 32-56% for owned, domestic dogs. Behavioral issues put young dogs at increased risk of euthanasia and are a leading cause of relinquishment to animal shelters. The purpose of this study is to determine whether performance in a visual tracking test, along with performance from 6 other behavioral tests and rigorous questionnaires, is a useful measure to predict behavioral pathologies in puppies. The visual tracking test was performed across 39 puppies at 3- and 12-months of age. Questionnaires (WDQ-Pet) were completed by guardians at 3-, 6-, 9-, and 12- months of age. Parameters extracted from the video recordings of the tracking tests were scored and analyzed alongside a battery of questions related to training, health, and reactivity under a variety of contexts. Our findings determined that the majority of puppies improved or maintained perfect performance of the tracking test with age (Mann-Whitney U Test: $U = 563.5$, $z\text{-score} = 2.24886$; $p = 0.02$). We also found that behaviors such as jumping up at the toy also decreased with age (Mann-Whitney U test; $U = 312$; $z\text{-score} = 3.52$; $p = 0.00044$), demonstrating an expected improvement in inhibitory control with age. No significant association between tracking time or jumping and multiple measures of fearful and distracted behavior were found. This test using these measures lacked discriminative ability to separate dogs in the way the other cognitive tests have done. Our results from this test inform and shape the larger study, as we seek to understand what tests and questions can reliably predict developing and behavioral pathology in puppies.

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