

Don't let fear slow you down: Can an open field novelty test help identify signs of early behavioural pathologies in dogs?

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Abstract: Fear and anxiety have been implicated in contributing to poorer health and a shorter lifespan in dogs and behavioural issues may be the leading cause of euthanasia in dogs¹. Behaviour problems worsen over time and intervening early is the best way to prevent the worsening of behavioural pathologies². The purpose of this study is to determine if an open field test can be used to help predict behavioural pathologies in puppies before they fully develop. The test was performed on 36 puppies at 3 and 12 months of age. Videos of the puppies performing the test were used to collect data on the puppy's movement and reactions and a fear score was given to the puppy based on demonstrated behaviors during the video. Analysis showed that the majority of dogs showed improved fear scores at the age of 12 months when compared to 3 months (Wilcoxon signed ranks test; $W = 37.00$, $p < 0.001$) (3 months: 9.24=Average fear score; 9.48=SD; 6.0=median; 12 months: 5.08=Average fear score; 7.99=SD; 0.0=median). The study also found that the fear scores at 3 and 12 months had a correlation and moderate positive relationship (Spearman's; $rs(35) = 0.51$, $p = 0.001$, $\rho = 0.51$) showing that there are multiple factors that effect a puppy's level of fear as they grow. There was also a significant difference between the fear scores of puppies who cringed/retreated from novel objects and those that did not at the 12 month test (Mann Whitney U test; $U = 86.00$, $p = 0.027$). These results mean that the open field test can demonstrate relationships between a puppy's behaviour in the test arena and general fearfulness, giving open field testing the potential to be a useful contribution to the greater goal of developing standardized behavioural testing that can be used to track and predict behavioural pathologies in puppies as they mature.

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References:

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