

Review

Using hypothalamic–pituitary–adrenal measures for assessing and reducing the stress of dogs in shelters: A review

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Abstract

Dogs admitted to animal shelters exhibit behavioral and physiological signs of stress. Among these is activation of the body's primary stress-responsive system, the hypothalamic–pituitary–adrenal (HPA) axis. HPA activity provides a metric for assessing both the dog's physiological response to the shelter as well as the effectiveness of attempts to reduce this response. Glucocorticoid measures of HPA activation are high for days following entry into a shelter. Further, it is unclear if eventual reduction in glucocorticoid levels represents actual adjustment by the dog to its new environment or a reaction (i.e., dysregulation) of the HPA axis to the continued stress. Interaction with a human has been found capable of reducing glucocorticoid responses of dogs to shelter housing as well as to additional stressors imposed in the shelter environment. These glucocorticoid reductions have been observed both at the time of human interaction and at later times. Sessions of interaction lasting 30 min or less have been found to have positive effects. These findings together with continued progress in our basic understanding of the mechanisms and mediators of HPA responses offer promise of identifying ever more practical means of reducing the physiological impact of stress, and thereby improving the welfare, of shelter dogs.

Keywords

Animal shelter; Stress; Hypothalamic–pituitary–adrenal; Cortisol; Dog; Human interaction; Welfare

Figures and tables from this article:

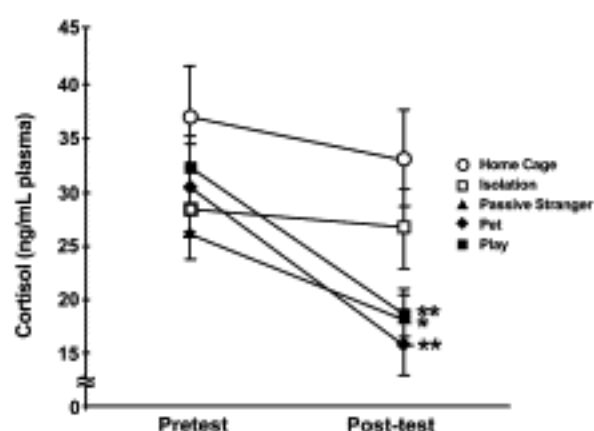


Fig. 1. Mean plasma cortisol levels of dogs prior to (pretest) and following (post-test) treatments. Home cage controls were returned to the home cage between samples. Vertical lines represent standard errors of the means. * $p < 0.05$ vs. pretest, ** $p < 0.01$ vs. pretest.

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