

University of Prince Edward Island

Faculty of Veterinary Medicine  
Summary of Dissertation

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**DEGREE OF MASTER OF SCIENCE**

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**Recognition of Stress Levels in Hospitalized Equine Patients  
During Various Veterinary Procedures**

In hospital, equine patients are exposed to unfamiliar stimuli. They undergo various procedures, including routine actions that are not always recognized as stressful. Patient stress levels vary, and patients may display behaviour considered problematic for staff. In-hospital procedures are essential: stress is induced, and problematic behavior persists or worsens, impeding efficiency and ease of procedures, which can become dangerous for horse and handler. Handlers may use force for treatment, instead of techniques that would calm the patient. The primary objective of this research was to determine a visual assessment method of identifying and measuring stress levels in hospitalized equine patients during various, minimally invasive procedures. If stress behaviour was easily recognizable and quantifiable, techniques could be implemented to mitigate stress levels. Using a cohort of 27 horses, of varying demographics, we aimed to create an assessment tool to recognize and quantify stress in hospitalized horses. Video footage, heart rate variability and salivary cortisol measures were collected for each subject before and after standardized physical examination, weighing, and blood collection. An ethogram and corresponding behavior scale were formulated from videoed behavioural and physiological data. Physiological and behavioural indicators of stress were analyzed with relation to individual horses, and it was determined that heart rate and heart rate variability significantly correlated with specifically with ear flicking across procedures for each individual, with the exception of blood collection. This thesis details the initial development of the assessment tool and findings. Through the dissemination of findings to veterinary professionals and owners, we will provide research-based evidence to improve the welfare of horses at the AVC Veterinary Teaching Hospital and the equine community. This research should improve the quality of healthcare that horsemen and veterinary professionals provide to equine patients.