

Evaluation of stress response of horses in equine assisted therapy programs. H. Marie Suthers-McCabe and Lynn Albano. Center for Animal Human Relationships, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, USA

There is anecdotal evidence that animal-assisted therapy is beneficial to the animal as well as humans, but very little credible scientific research has been performed to substantiate the benefits that are purported for the therapy animals. Even less scientific evidence has been published regarding the potential detrimental effects for animals used for therapy. In light of the growth of the equine assisted therapy industry, it is incumbent on us to evaluate the impact on the horses and to identify short and long-term effects that may result from their participation in this activity.

This exploratory study was designed to measure stress in therapy horses' pre- and post-therapy session. Plasma cortisol was used as physiological marker of stress. Each horse was also videotaped during the therapy session and tapes were reviewed for behavioral changes that may indicate stress. A correlation was sought between behaviors that are thought to be indicators of stress and physiological markers of stress. Four different programs in Florida volunteered to participate in this study. Two programs were for mental health patients and two programs were for the physically and/or mentally handicapped. Blood was drawn from a total of 28 horses (19 geldings, 9 mares) of approximately 15 different breeds, with five horses participating on two separate days for a total of 33 samples. The horse's ages ranged from five years old to 26 years old. Of the 33 samples, three horses were resting in their normal environment during the therapy session, six horses participated in the therapy session but were ridden by able bodied volunteers, and 24 horses participated in the therapy session with patients. Blood was drawn prior to a therapy session and again immediately after the session was completed.

The change in blood cortisol levels in the horse was measured using Coat-A-Count Cortisol radioimmunoassay. Statistical analysis was done using the PROC T-Test of the SAS system to perform paired t-tests. As a group, cortisol levels decreased by a mean of 24.07 nmol/L with a standard error of 5.993 and $p = 0.0003$. When evaluating horses individually, there were only six horses, five ridden by patients and one ridden by a volunteer, who did show increases in blood cortisol levels.

The results indicate that 82 percent of these therapy horses are not experiencing significant physiological stress, suggesting that Equine-Assisted Therapy is potentially good for the horse as well as for the human. These results may also have important implications in identifying those horses that experience a level of stress that may lead to "burn-out" and associated health and behavioral problems. Further studies could help program operators identify horses that are unsuitable for therapy horses prior to accepting a donated animal, or identification of characteristics early in program participation that suggest a particular horse is getting stressed and needs different management or a different job.