



# Equine Therapy

## Pure Stress For The Horse?

BY CHRISTIANE BAARS

Equine-assisted therapy is an established form of therapy for mentally and physically disabled adults and children using horses in different activities. The interest in this form of therapy was partly triggered by the Danish dressage rider Lis Hartl, who won the silver medal at the Olympic Games in 1952 and 1956 despite suffering from polio. Showing that disabled people can strongly benefit from the interaction with horses, many health professionals and researchers became interested in this topic.

So far, most research focused on the benefits for the patients when interacting with the horse; ranging from improvement of flexibility, balance and muscle strength, through riding the horse to positive effects on concentration, learning capacity, and exposure to emotions from handling the horse. Only little research addressed the therapy sessions from the horse's perspective. Working as a therapy horse could negatively affect the horse in a sense that it might experience severe stress or suffer from poor welfare. Research with other therapy animals, for instance, has shown that they can suffer from chronic stress due to incorrect integration into the therapy or a lack of breaks. Horses are flight animals and a consistent experience of stress can cause severe mental and physical damages to the horse. Therefore, it is important to investigate whether the horse can quickly adapt to the stress circumstance. The horse has to experience mental and physiologic comfort again in order to prevent diseases or misbehaviours.



*Invisible: Even horses which seem relaxed and show no obvious signs of stress may still experience stress.*

Facing the importance of stress for the future of equine-assisted therapy that benefits humans while not being harmful to horses, Christiane Baars decided to determine whether there is a significant difference in the amount of perceived stress between therapy horses being ridden by a disabled rider and by a recreational rider.

The study was conducted as the final thesis of her bachelor program “Equine, Leisure and Sports” at the Van Hall Larenstein University of Applied Sciences in Wageningen, the Netherlands. Commissioned by the AIZOO foundation, which focuses on animal-assisted therapy, this study assessed the stress level of the horses by measuring their Heart Rate Variability (HRV).

### **The study**

Measuring the HRV is a well-established technique to evaluate overtraining, stress and diseases in humans. As implied in common sayings, like “*The heart leaps into the throat*” or “*The heart races*”, stress leads to an increase in heart rate as a reaction of the whole organism to a threatening situation. These are normal adaptive processes to internal and external stressful conditions. Measuring the milliseconds between two heartbeats can give an indication of how much stress is experienced. In a normal healthy resting state where the body feels comfortable, the length of these intervals varies from beat to beat. When experiencing severe stress, the body

generates a fight-or-flight response which then increases the heart rate, further decreasing the distance between two heartbeats. When re-establishing the resting state the body slows down the heart rate again, causing the distance between heartbeats to increase again. Thus, the more variability between heartbeats, the more the horse is able to adapt and to feel comfortable. This mechanism of self-regulation is an important indicator of dealing with the experienced stress. For horses this method of assessing stress conditions via HRV has been only recently applied.

In order to measure the heart rate variability of therapy horses, three minutes of cardiac data from 12 horses were collected with a heart rate monitor on two separate days. During the sessions the horses were used in therapy for different mentally disabled patients. In order to gain control data, the same exercises were then executed by a non-disabled recreational rider. Besides that, data about the horses and the riders was collected in order to be able to make further assumptions. The results showed that horses that have been used in equine-assisted therapy for a longer period of time, showed greater distance within the beat-to-beat interval and therefore were more able to relax during therapy sessions. Thus, repeating a specific task can decrease experienced stress - habituation takes place. An interesting contradiction to the believe that horses experience more stress when used in therapy sessions than when ridden by a recreational riders was shown by a recorded lower variance rate of the horses when ridden outside therapy. One reason for this could be the higher expectations and more assertive demands of the leisure rider in comparison to the patients in therapy.

### **In future**

Organisations offering Equine-Assisted Therapy should observe and identify horses that experience any form of stress that may lead to health and behavioural problems (e.g. the horse is aggressive or bites) because this is the horse's only way of trying to communicate unhappiness, discomfort or pain. Addressing future research, it could be interesting to develop an easy to use and efficient tool for the assessment of welfare changes of horses used in therapy. Especially through the increasing use of horses in therapy it becomes more important to conduct long term studies that address the well-being of therapy horses. There is a necessity for guidelines regarding the selection and standards for the training of therapy horses, as used with guide dogs already, to ensure that stress levels will be kept at a minimum for the horses.