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Use of Infrared Thermography (IRT) in  
equine assisted interventions:  
physiological aspects

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This work is part of the project "Horse welfare in therapeutic sessions for children with autism: monitoring and assessment" (Ricerca Corrente IZSve 13/2013), coordinated by the National Reference Centre for Animal Assisted Interventions (CRN IAA) and funded by the Italian Ministry of Health. This study focuses on the welfare of horses involved in Equine Assisted Interventions (EAI) and is designed to evaluate the use of innovative and non-invasive methods (such as thermography and measurement of heart rate variability and saliva collection) to inform the professionals involved in EAI, limiting stressful situations for the animals.

In particular, in this paper physiological indicators of the welfare of horses involved in therapeutic sessions of children with Autism Spectrum Disorder (ASD) are taken into account: cortisol levels in saliva and blood samples, surface body temperature in the area of the lacrimal caruncle, and heart rate variability. All data were collected from horses following the same session protocol with a child with ASD and a typically developing child (control group). Moreover, each therapeutic session was standardized and divided into different phases (baseline, grooming, start, riding, alt, end, post).

From the analysis of thermographic results significant temperature increases were registered from the baseline phase to grooming activities, start and post work session, only in the group consisting of children with ASI and not in typically-developing children.

In particular, it was noted that the horses ridden by children with ASD showed almost at all stages greater periorbital temperature than horses ridden by control children, although this difference was statistically significant only in the post-work phase.

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