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## Dutch Study Uses Special Shoes to Analyze Gait in Water-Based Treadmill Therapy

Via press release from the Society for Experimental Biology. This research was presented today at the Society for Experimental Biology's Annual Meeting at Marseille, France.

A team of scientists from Wageningen University, led by Professor Johan van Leeuwen, has carried out studies both into the benefits of a method of equine rehabilitation. By using computer modeling and specialist horseshoes to measure acceleration, these investigations suggest that aqua-training rehabilitation is beneficial to horses due to lower impact accelerations.

Rehabilitation after equine joint and muscle injuries, including those of the back, shoulders and legs, now often involves 'aquatraining', whereby horses move in water-filled treadmills. Depending on the condition of the horse, different workloads can be obtained by regulating water level and walking velocity. Due to buoyancy, this treatment is currently thought to reduce weight-bearing forces, which can otherwise have detrimental effects on joints, but to date there has been a virtual absence of studies into the magnitude of these benefits.

Professor van Leeuwen's team has used special horseshoes to measure accelerations of horses undergoing aquatraining, as well as walking normally, which provide a good indication of the impact forces involved. "Our results, based on data from seven horses, show the accelerations are significantly lower during 'aquatic walking'," he asserts. "We will be carrying out further experiments to confirm these results, but at this stage, it appears that aquatraining may indeed be beneficial for rehabilitation after joint injury."

This work involved collaboration with the Department of Equine Sciences at Utrecht University, the Mary Anne McPhail Equine Performance Center at Michigan State University and the Dutch Equestrian Centre.