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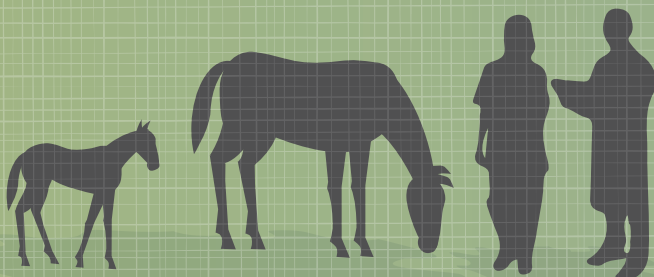
Championing the Equine Vet



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Handbook of Presentations



14.20

What is the science behind vibration therapy?

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There are several different vibration techniques available for the horse. These range from high frequency handheld devices to whole body vibration (WBV) platforms. This presentation will discuss the science behind the use of WBV in the horse.

Whole body vibration units come in a variety of types. They may be a portable platform or may be an entire stall. Stall units may also incorporate a lift system in order to encourage asymmetrical loading of the limbs. Units also vary in the type of vibration pattern and frequency of vibration. Vibration plates provide mechanical energy in the vertical direction, horizontal (vortex wave) direction, and the amplitude of the motion and speed of acceleration determine the ultimate magnitude of the vibration produced.

While WBV has been extensively studied in humans, only recently has it been investigated in the horse. Results of these studies have been variable with some studies showing beneficial effects, while others have shown no effect. The following is a summary of the effects of WBV in the horse.

- Lab parameters
 - o Reduced heart rate, cortisol, CK. No change in lactate, insulin, haematology, GGT, BUN, creatinine [1]
 - o Muscle – No significant changes in BUN, AST, GGT, CK, LA [2]
- Bone mineral content
 - o Stalled vs. exercised horses – Stall confined + WBV and exercised groups had the same BMC [3]
 - o WBV was insufficient to overcome osteopenia from immobilisation due to stalling and disuse [4]
 - o 28 days of WBV had no effect on bone mineral content, serum pyridinoline cross-links and osteocalcin compared with controls [5]
- Multifidus muscle size
 - o Significant increase in cross-sectional area at 30 and 60 days compared with controls [6]
 - o Muscle activity and warm up – No significant findings compared with controls [7]
- Hoof growth
 - o Conflicting as one study showed increased hoof growth [8] and another showed no effect [9]
- Lameness
 - o No effect on chronic lameness in horses [10]

- Body temperature
 - o WBV therapy did not warm the muscles enough to increase external body temperature [11]
- Stride length
 - o 28 days of WBV had no effect on stride length at the trot [5,12]
- Relaxation (qualitative observations)
 - o Horses appear to be more relaxed both during and after WBV [12,13]

In summary, the majority of the studies have been unable to document any positive effect of WBV on the horse. However, it should be noted that different WBV units or protocols were used thus making it difficult to compare results.

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