# Enlightened Equine

Better Horse Management through Science

Equine Hoof Imbalances and Their Whole-Body Consequences

Steve Hebrock, MHCP, MS

These are the images added to my presentation after the Speaker Notes had already been submitted...

















In humans, the symptoms of hand-arm vibration syndrome (HAVS) among people who use various types of vibrating power tools have been identified as including:

- ∩ Destructive joint changes (osteophyte formation)
- ດ Destructive bone changes (loss of elasticity)
- ∩ Vascular problems (impaired circulation)
- ∩ Neural problems (increased vibrotactile & thermal perception) thresholds, paresthesia)
- ∩ Muscular problems (reflexive contractions, impaired precision control)



In humans, the symptoms of hand-arm vibration syndrome (HAVS) among people who use various types of vibrating power tools have been identified as includi

ດ Destructive ດ Destructive ດ Vascular pr ດ Neural prot thresholds, ດ Muscular pi control)

ANSI S3.18-2002 ISO 2631-1: 1997

**AMERICAN NATIONAL STANDARD** Mechanical vibration and shock -Evaluation of human exposure to whole-body vibration — Part 1: **General requirements** 

### **Equine Hoof** Imbalances

### perception

ed precision



"This part of ISO 2631 defines methods for the measurement of periodic, random and transient whole-body vibration. It indicates the principal factors that combine to determine the degree to which a vibration exposure will be acceptable. Informative annexes indicate current opinion and provide guidance on the possible effects of vibration on health, comfort and perception and motion sickness. The frequency range considered is

- 0.5 Hz to 80 Hz for health, comfort and perception and - 0.1 Hz to 0.5 Hz for motion sickness."



"This part of ISO 2631 is applicable to motions transmitted to the human body as a whole through the supporting surfaces: the feet of a standing person, the buttocks, back and feet of a seated person or the supporting area of a recumbent person. This type of vibration is found in vehicles, in machinery, in buildings and in the vicinity of working machinery."

Gait	Strides per Minute
Rein Back	50
Classic Fino	166
Average (n=22)	92.4

Equine Hoof Imbalances

### Frequency (Hertz)

3.3 11.1 6.2

- Hilary Clayton



### TYPE OF SHOEING

Steel shoe Unshod hoof Easy-Glu Equisoft+Easy-Glu Springtop Sleipner Nail-on Equisoft+Springtop Sorbothane 'Blue pad' Leather **Brown Strider** 'Elastomer pad' Shocktamer Equisoft AMF moulded AMF in moulded



### Symptoms of obstacles at the foot include:

- ∩ Flaring of the hoof wall
- ∩ Thickening of the hoof wall
- Ω Cracks in the hoof wall
- Ω Uneven wear patterns on the bearing surface of the hoof wall or shoe
- ∩ Squared-off wear pattern at the toe of the hoof or shoe
- ດ Incorrect landings



### In reality, horseshoes:

- Ω Offer only minimal protection in exchange for a softer foot and increased "jerk," vibration, and concussion forces ດ Cannot successfully correct conformation issues without causing
  - harm to joints and soft tissues through unidirectional concussion, but can be successfully used to either increase or decrease traction
- ∩ Can enhance the flight arc (but not the stride length) at the cost of increased tendon strain, "jerk," vibration, and concussion forces, but cannot hasten breakover time
- Remove any possibility of the hoof correcting itself through wear



### **The Hoof Care Continuum**



### Harm

## Equine Hoof Imbalances





### Help



Identifying the properly-trimmed hoof can be done via two methods, with a combination of both methods being the most useful:

Ω Visual inspection of the landing at the walk ∩ Auditory inspection of the landing at the walk

Listening is the superior assessment tool



REMEMBER: The point of departure is the knowledge that the properlytrimmed foot must land flat on a flat, unyielding surface. When observing the foot at the walk:

∩ Watch for even landings on each foot, with no "slapping down" of the hoof after initial ground contact, in both the anterior-posterior and medial-lateral directions ∩ Listen for soft, distinct landings on each foot, with no "double taps" or "smeared" sound



### The Reciprocal Relationship Between Hoof & Body Health

orsemanship, LLC

An Integrative Master Class Exclusively for Veterinarians & Animal Chiropractic Practitioners

*iberated* 

Monday, May 23<sup>rd</sup> – Thursday May 26<sup>th</sup> White Stallion Ranch Tucson, AZ

www.LiberatedHorsemanship.com



## www.EnlightenedEquine.com