

A preliminary study on the effects of head and neck position during feeding on the alignment of the cervical vertebrae in horses

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OBJECTIVE: to investigate whether head and neck position during feeding have a significant effect on the alignment of the atlas and cervical vertebrae in the neck of the horse.

OUTCOME: provides preliminary data that feeding method may affect cervical spinal alignment and associated muscle tension.

INTRODUCTION

- Evidence on the subject of how feeding could affect overall musculoskeletal health is largely anecdotal with very little scientific research.
- The use of a hay net or other container to feed forage is common as many owners want to reduce wastage from floor feeding.

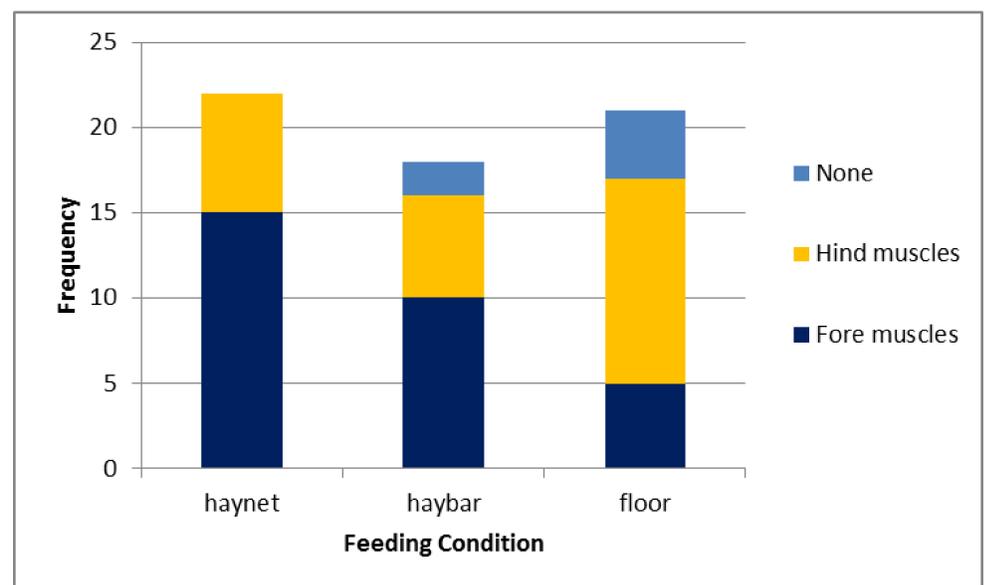
METHODOLOGY

- A crossover study, twelve horses (4-14 yrs, mixed sex, similar work level) were fed hay from three different sources (haynet, Hay Bar, floor) spending 14 days in each condition.
- All participants received four chiropractic (McTimoney approach) treatments by a qualified therapist blinded to treatments; at time periods 0, 14, 28, 42 days, each at the start of a new condition.
- Duplicate palpations for vertebral asymmetries and soft tissue tension (poll, neck, shoulder, pectoral, thoracic, lumbar, gluteal regions) were noted and recorded. Soft tissue tension was noted as were behavioural reactions.
- At each time period, the following frequency data was analysed using chi-squared test using a two-way contingency table: frequency of atlas rotation and tilt, cervical misalignments of C2-5 and soft tissue tension.

RESULTS:

- There was no significant association between forage feeding method and frequency of atlas rotation misalignment ($X^2=5.5$, $df=4$, $p<0.05$), atlas tilt ($X^2=1.0$, $df=4$, $p<0.05$) or cervical vertebrae misalignment ($X^2=1.22$, $df=4$, $p<0.05$).
- There was a significant association between muscle tension frequency in fore and hind quarters and feeding method ($X^2=10.6$, $df=4$, $p<0.05$)
- There was a higher frequency of horses with neck muscle tension following the haynet (36%) and Hay Bar (41%) condition but lower frequency following the floor condition (17%).

Figure 1: Frequency of palpable muscle tension in different regions of the body following each test condition



CONCLUSIONS

- This study provides preliminary data that feeding method may affect cervical spinal alignment and associated muscle tension.
- Further research is recommended using skin markers and electronic data analysis to establish measurable effects of cervical alignment.

LAYPERSONS MESSAGE

- The method of feeding hay to horses (floor, haynet, Haybar) affects the head and neck position on a daily basis.
- This study suggests an effect on the musculoskeletal system, with notable differences in areas of muscle tension.
- This may imply a link between how horses are fed and their musculoskeletal health, as well as implications during rehabilitation.