



CRIBBING in Horses



ZOOL567 LITERATURE REVIEW BY KATI TRAN

WHAT IS CRIBBING?

A behaviour with no known function where horses put their incisor teeth onto a fixed surface, pull their head backwards while contracting their neck muscles, breathe in and make a grunting sound^{1,9,10}

CRIBBING HORSE CHARACTERISTICS

Heart Rate and Nociception

(processing of stimuli) - significantly lower compared to horses that don't perform stereotypies⁶

B-Endorphins (hormonal indicator of stress) - basal levels in cribbing horses are significantly different than those that don't crib (further studies needed)^{2,6}

Motivation & Time Usage-

Very high motivation and will exert lots of energy, up to 288N/30.5kg, to be able to crib⁵. They spend 15-65% of their time cribbing⁹

PREVENTIONS

Very hard to stop cribbing once a horse develops it. All failed to fully stop or decrease cribbing. Some methods can cause stress and frustration, leading to more cribbing.

Preventions include:

- Collars & Muzzles⁴
- Manipulating Cribbing Surfaces⁴ (e.g. removing, electrifying, making bitter)
- Toys & Exercise¹⁰



WHAT ARE THE CAUSES OF CRIBBING?

Diet



Horses were seen to crib 4x more when being fed concentrated feed, also known as grains, compared to oats or hay^{1,2,8}. Sweet feed and sugar were also found to induce cribbing.^{1,2}

Heritability

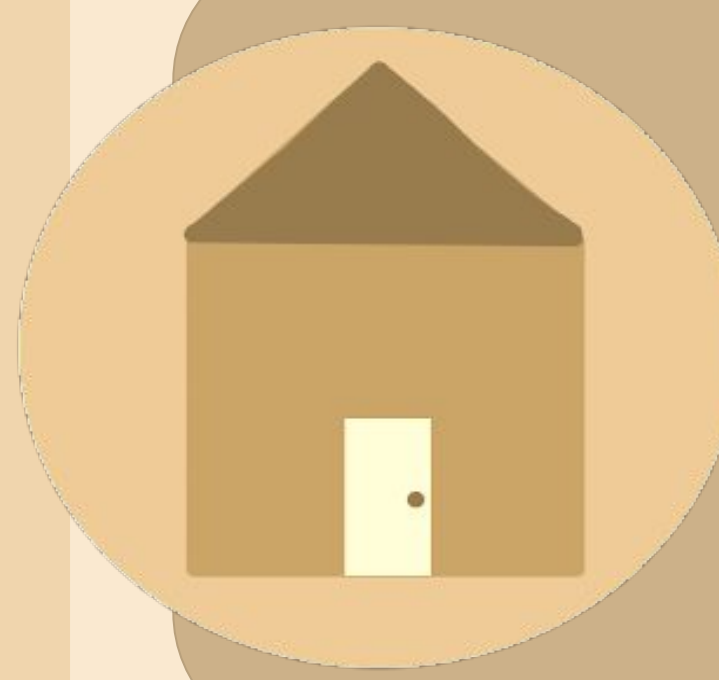
Heritability was found in a population of Thoroughbred horses, so horses could be predisposed to crib³

Weaning Methods

Horses who were abruptly weaned as a young horse was found to develop cribbing⁸



Housing



Only domesticated horses are found to crib, no free-ranging horses have been observed to perform this behaviour, but further research must be done on the effects of housing and management⁹

Cribbing Neighbours ARE NOT a cause

Being neighbours with a cribbing horse didn't show to cause a horse to begin cribbing; they just induced more cribbing in horses that have already developed cribbing⁷



FUTURE STUDIES

Changing Complete/Components of Diet - Possibly a diet with more fibre could be given^{1,2}

Social Contact - Increasing their sociality with other horses could possibly reduce stress, and therefore, decrease cribbing⁴

Pharmacological Treatment - Possibly administering some pharmacological treatment to manipulate hormones or other physiological characteristics⁵

References:

- 1) Albright, J., Sun, X., & Houpt, K. (2017). Does cribbing behavior in horses vary with dietary taste or direct gastric stimuli? *Applied Animal Behaviour Science*, 189, 36–40. <https://doi.org/10.1016/j.applanim.2017.01.015>
- 2) Gillham, S. B., Dodman, N. H., Shuster, L., Kream, R., & Rand, W. (1994). The effect of diet on cribbing behavior and plasma β -endorphin in horses. *Applied Animal Behaviour Science*, 41(3–4), 147–153. [https://doi.org/10.1016/0168-1591\(94\)90019-1](https://doi.org/10.1016/0168-1591(94)90019-1)
- 3) Hemmann, K., Raekallio, M., Vainio, O., & Juga, J. (2014). Crib-biting and its heritability in Finnhorses. *Applied Animal Behaviour Science*, 156, 31–43. <https://doi.org/10.1016/j.applanim.2014.04.008>
- 4) Hothersall, B., & Casey, R. (2012). Undesired behaviour in horses: A review of their development, prevention, management and association with welfare: *Undesired behaviour in horses*. *Equine Veterinary Education*, 24(9), 479–485. <https://doi.org/10.1111/j.2042-3292.2011.00296.x>
- 5) Houpt, K. (2012). Motivation for cribbing by horses. *Animal Welfare*, 21(1), 1–7. <https://doi.org/10.1120/096272812799129367>
- 6) Lebelt, D., Zanella, A. J., & Unshelm, J. (1998). Physiological correlates associated with cribbing behaviour in horses: changes in thermal threshold, heart rate, plasma β -endorphin and serotonin. *Equine Clinical Behaviours*, 27(S27), 21–27. <https://doi.org/10.1111/j.2042-3306.1998.tb05140.x>
- 7) Nagy, K., Schrott, A., & Kabai, P. (2008). Possible influence of neighbours on stereotypic behaviour in horses. *Applied Animal Behaviour Science*, 111(3–4), 321–328. <http://doi.org/10.1016/j.applanim.2007.06.006>
- 8) Waters, A. J., Nicol, C. J., & French, N. P. (2010). Factors influencing the development of stereotypic and redirected behaviours in young horses: Findings of a four year prospective epidemiological study. *Equine Veterinary Journal*, 34(6), 572–579. <https://doi.org/10.2746/042516402776180241>
- 9) Wickens, C. L., & Heleski, C. R. (2010). Crib-biting behavior in horses: A review. *Applied Animal Behaviour Science*, 128(1–4), 1–9. <https://doi.org/10.1016/j.applanim.2010.07.002>
- 10) Whisler, L., Raum, M., Pina, L., Pérez, L., Erb, H., Houpt, C., & Houpt, K. (2011). Effects of environmental factors on cribbing activity by horses. *Applied Animal Behaviour Science*, 135(1–2), 63–69. <https://doi.org/10.1016/j.applanim.2011.09.001>

