

Main findings and recommendations of reviewed studies investigating crib-biting

Author(s)	Year of publication	Main finding	Recommendations for crib biting
Albright et al	2016	Anti-crib devices are effective in reducing crib-biting and significant distress from their use was not evident.	Surgical rings have transient efficacy and efforts to improve husbandry should continue.
Alberghina et al	2015	Immunotransmitters are related to anxiety and chronic stress	No recommendations made for management of crib-biting.
Benhajali et al	2010	Stereotypy varies depending on the reproductive status of mares, the presence of a foal regulates the incidence and type of stereotypy.	No recommendations made for management of crib-biting.
Briefer Freymond et al	2015	HPA axis reactivity is different in crib-biters compared to controls. Stereotypy may be a coping mechanism, and once developed, performance of stereotypy may improve horse welfare.	No recommendations made for management of crib-biting.
Briefer Freymond et al	2020	Stereotypic horses do not differ in their learning capacity compared to controls.	Allowing stereotypic horses to perform their stereotypies might allow these horses to perform successfully.
Fureix et al	2011	Yawning cooccurs with stereotypic behaviour, including crib-biting	No recommendations made for management of crib-biting.
Hanis et al	2020	Oral stereotypies (including crib-biting) were influenced by working hours, amount of hay and concentrate feed.	Equine practitioners in Malaysia should be aware of the factors (working hours, number of feeds/day and amount of hay and concentrate/day) on the development of abnormal behaviours.
Hemmann et al	2014	Crib-biting is highly heritable in Finnhorses.	Detecting genetically susceptible individuals may enable earlier interventions and enhancement of their management. (This is not currently possible).
Kirsty et al	2015	Crib-biting horses have sensitised ventral nervous circuitry and atrophied dorsal circuitry resulting	No recommendations made for management of crib-biting.

		in accelerated habit formation compared to controls.	
Krisova et al	2015	In horses diagnosed early enough, surgical treatment performed within 6 months from the initial signs of crib-biting achieved an 80% success rate.	The surgical treatment of crib biting by modified Forsell's myectomy is the recommended option in the therapy of this oral stereotypy.
Leme et al	2014	Stereotypies (including crib-biting) were associated with stabling and feeding management.	Need to better understand owner' and caretakers' beliefs and attitudes toward horse husbandry.
Lesimple et al	2016a	Stereotypies (including crib-biting) were associated with amount of roughage/day, amount of turnout/day, restrictive riding practices (short reins and high hand position while riding).	Horse welfare is multifactorial and needs a whole management approach (not parameter by parameter approach).
Lesimple et al	2019	Stall architecture affects rate of crib-biting.	Constant single stall housing is inappropriate for horses however consideration should be made when building such housing systems to minimize the stress the built form imposes on horses.
Malamed et al	2010	Crib-biting was associated with colic, but not type or severity of colic, in a veterinary hospital population.	A causal relationship between crib-biting and colic would be helpful to guide management of horses. (This is yet to be established)
Mazzola et al	2016	A concentrate feed dispenser that slowed that rate of ingestion significantly decreased the amount of time spent crib-biting.	The use of a concentrate feed dispenser that slows the rate of ingestion may be beneficial in horses that eat too quickly, particularly in horses fed a high-energy diets.
Normando et al	2011	English riding style was linked to higher prevalence of stereotypies (including crib-biting), especially when combined with living under restrictive stabling (<6 hours/day turnout).	No recommendations made for management of crib-biting.
Rochais et al	2018	Slow feeders are associated with less stereotypic behaviour (including crib-biting.	More thought be given to potential strategies (and devices) when feeding

			stalled horses that aim at improving feeding and promote welfare and reduce frustration.
Tadich et al	2013	Stereotypy (including crib-biting) was associated with use of wood shavings. No association was found between contact with other horses and development of stereotypies (14% of horses in the study no physical or visual contact with other horses).	Changes to management and husbandry of racehorses would be beneficial.

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