ScarsdaleVets
Equine

Headshaking: are we any closer to an effective treatment?

Equine headshaking is a frustrating disorder for horses, owners and vets alike. Horses display violent, usually vertical, head flicks, muzzle rubbing and snorting and can be severely distressed by the condition. The term 'idiopathic headshaking' has been used for the condition because, until very recently, a specific cause has not been identified.

Treatment options to date have been limited by our incomplete understanding of the disease; however, it is hoped that this recent progress will lead to more rational and successful therapies in the near future.

What does headshaking look like?

A list of clinical signs and their reported frequency is shown in table 1. Headshaking can be so severe that the horse inflicts considerable self-trauma (abrasions to muzzle, limbs) and is dangerous to handle and ride. Some horses appearing to be more severely affected than others. If severe, headshaking can be a considerable welfare issue as it may prevent the horse from performing even simple activities such as eating. Clinical signs may be continuous or intermittent with approximately 60 % of headshakers showing seasonal signs, i.e. headshaking only at specific times of year (usually spring to autumn) with horses entering periods without clinical signs (remission) in winter. Headshaking can also vary in response to weather patterns and exercise. Horses with severe clinical signs during bright sunny days and with a reduction of headshaking at night are termed 'photic headshakers'. In other horses, signs may be triggered by wind or rain or a sharp, loud sound or eating.

Clinical Sign	% of horses
Shaking or flipping the head in a vertical plane	79-92
Acting as if an insect had flown up the nose	72-88
Muzzle rubbing	60-79
Snorting	51-73
'Flips' upper lip	72
Strikes at face with foot	42-63
Anxious expression	61
Rubs nose on ground while stationary	46
Rubs nose on ground while moving	44-45
Horizontal headshaking	7-32
Rotatory headshaking	7
Sensitive muzzle	13
Staring into space	2-19
Panic following staring episodes	13
Submerging muzzle in water	3
Headshakes at rest	41
Headshakes at rest only	2-4
Headshakes at exercise only	32-56
Headshaking increases when excited	51
Exercise precipitated headshaking	41
Headshaking at rest or exercise	42-55
Headshaking only when ridden	10
Headshaking associated with bright, sunny days	52-64
Headshaking reduced at night	52-74
Seeks shade in environment	6-30
Avoidance of light	35
Headshaking improved indoors	77
Headshaking improves on rainy days	58
Headshaking improves on windy days	22
Headshaking worse on windy days	22
Seasonality of headshaking signs	59-64

Table 1: *Clinical signs exhibited by headshaking horses with their reported frequency.*

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Which horses get headshaking?

Headshaking is reported to affect 1-1.5 % of horses in the UK and appears to affect horses worldwide. Headshaking can occur at any age but is primarily a disease of adult horses with an average age of onset of 9 years. Geldings appear more likely to be affected although the reasons for this are unknown. All breeds appear susceptible and headshaking horses are used in most equine disciplines although horses used in lighter activities appear most frequently affected.

What causes headshaking?

Although it has long been suspected that the trigeminal nerve is involved in headshaking, this was only confirmed recently. The trigeminal nerve supplies sensation to the face. Researchers at the University of California, Davis demonstrated that headshaking horses have a lower threshold for activation of the trigeminal nerve than healthy horses, i.e. it is hypersensitive to stimulation. This means that minor stimuli (e.g. rain drops touching the muzzle) that would not bother a healthy horse are perceived as painful by a headshaking horse.

Human sufferers of trigeminal nerve pain report intermittent or continuous burning, itching, tingling, tickling, or electric-like pain, which appear to equate well to the observed signs displayed by headshaking horses. Interestingly, a seasonal headshaker tested during a time of remission showed similar trigeminal nerve activity to healthy horses, suggesting that the hypersensitivity is reversible. The underlying cause of the trigeminal nerve hypersensitivity remains unknown at present.

What treatments are available for headshaking?

The majority of headshakers are *managed* (which is not always possible) rather than cured as most current treatments have no effect on correcting the trigeminal hypersensitivity. Future treatments capable of reducing this hypersensitivity will likely hold the key to eliminating the scourge of headshaking.

There have been few scientific trials of headshaking treatments. Many are not licenced for equine use and have not been tested for efficiency of absorption and excretion or safety. Table 2 details possible treatment options, their availability and possible side effects.

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Table 2: Possible treatments, evidence of success and possible side effects of treatments used in headshaking

Treatment	Availability	Evidence of success	Possible side effects
Nose nets	Equine suppliers	Reduction of headshaking in 50-70 % horses	Irritated by mask, panic
Face mask	Equine suppliers	Reduction of headshaking in 50 % horses	Spookiness, reduced vision
Cyproheptadine	Veterinary prescription	Variable response; reduction of headshaking in 0-70 % horses	Mild lethargy, drowsiness, inappetance
Carbamazepine	Veterinary prescription	Variable response; reduction of headshaking in 0-90 % horses	None
Antihistamines	Veterinary prescription	Variable response; reduction in headshaking from 0-30 % horses	Sedation
Phenobarbitone	Veterinary prescription	Improvement in reducing distress of very severely affected horses	Mild sedation common
Gabapentin	Veterinary prescription	No data available	Sedation
Corticosteroids	Veterinary prescription	Variable response; reduction in headshaking from 0-15 % horses	Laminitis
Sodium cromoglycate eye drops	Veterinary prescription	Successful in three (atypical) seasonal headshakers	None
Melatonin	Veterinary prescription	Variable response; reduction in headshaking from 28-47 % horses	May not shed winter coat
Magnesium	Equine suppliers	Reduction headshaking in 47 % horses	None
Chiropractic therapy	Paraprofessional	Variable response; reduction in headshaking from 4-14 % horses	None
Homeopathy	Complementary therapist	Reduction in headshaking 6 % horses	None
Acupuncture	Complementary therapist	Reduction in headshaking 16 % horses	None
Fly control	Widely available	Variable response; reduction in headshaking from 3-17 % horses	None
Cutting infraorbital nerve	N/A	NOT RECOMMENDED	Recurrence of headshaking, severe pain and self-trauma
Platinum coil implantation	Veterinary surgery	Salvage procedure only, success in approximately 50 % , may require multiple surgeries	Recurrence of HSK, muzzle rubbing and self-trauma (63 %)

Conclusions

Trigeminal nerve hypersensitivity has recently been confirmed as the cause of headshaking however, the underlying cause of this hypersensitivity is still unknown. Future treatments aimed at reversing this hypersensitivity are likely to have better success than current therapies and improve the welfare of HSK horses.

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