

Head Shaking

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a horse with
head shaking,
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About This Column

Behavior problems in horses are often not given proper attention. While most veterinary practices are necessarily geared toward the medical aspect of care, there are many opportunities in which behavior awareness can benefit the horse, the owner, and ourselves. This column acknowledges the importance of behavior as part of veterinary medicine and speaks practically about using it effectively in daily practice.

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Head shaking is a problem in which horses persistently shake their heads either up and down (the most common presentation) or side to side.¹ Head shakers may also snort or sneeze excessively, rub their faces on various objects, flip their upper lips, strike their faces with their forelimbs, or have an anxious expression (i.e., the cutaneous muscles tense, and the sclera show). Head shaking is one of the most difficult problems to diagnose because of the great diversity of causes. This article provides a brief overview of the many causes of this condition and focuses on the diagnosis and treatment of head shaking as a behavioral disorder.

CAUSES

Some head shaking is normal. Horses shake their heads to dislodge flies, and there is great individual variation in this normal behavior. At a certain fly density, some horses with sensitive skin are very reactive compared with less sensitive horses. For horses with sensitive skin, excellent fly control is essential to reduce head shaking. Horses may also shake their heads if they are restrained when they are highly motivated to run (e.g., if other horses are running when they cannot). Excessive head shaking is not a disease but rather a sign of an underlying problem that may be due to injury, a disease process, learning, environmental stimuli, or stressors. Head shaking varies greatly in its frequency, duration, and severity. Mild, intermittent head shaking may not interfere significantly with a horse's ability to be ridden. However, more severe cases may make it difficult or even dangerous to ride a horse (Table 1).

The context in which head shaking occurs varies by case. In a survey of 254 horses with head shaking, 51% did so when excited, 41% did so when at rest, and 64% varied with the season. Of the horses in the latter group, 39% exhibited the most head shaking during the spring and summer, whereas 43% had the most severe head shaking during the spring, summer, and autumn. Head shaking occurred least often in winter. Horses with head shaking that varied with the season exhibited more head shaking on sunny days; less head shaking was observed on rainy or windy days, when indoors, and at night. The nonseasonal head shakers did not show this differentiation.¹

Head shaking beyond the normal intensity, frequency, or duration occurs for a wide variety of reasons that can be broadly grouped into the following categories: environmental problems, medical problems, traumatic injury, inappropriate riding techniques or bit, and compulsive disorder (CD).

Medical and Traumatic Problems

A large number of medical and traumatic problems have been identified as causes of head shaking. The patient's oral cavity should be examined thoroughly while the clinician considers diagnostic differentials such as buccal ulceration, periodontal disease, dental periapical abscesses, mandibular fracture or cyst,² temporohyoid osteoarthropathy,³ or wolf teeth (the

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Table 1. Grading System for Head Shaking^a

Grade	Definition
1	Intermittent and mild clinical signs; facial muscle twitching; rideable
2	Moderate clinical signs; definable conditions under which signs occur/develop; rideable with some difficulty
3	Rideable, but unpleasant ride and difficult to control
4	Unrideable; uncontrollable
5	Dangerous, with bizarre behavior patterns

^aReprinted with permission from Newton SA, Knottenbelt DC, Eldridge PR. Head-shaking in horses: possible aetiopathogenesis suggested by the results of diagnostic tests and several treatment regimes used in 20 cases. *Equine Vet J* 2000;32:208-216.

first upper premolars) that should be removed. The upper respiratory tract should be thoroughly evaluated, with special consideration given to allergic rhinitis, vasomotor rhinitis, sinusitis, or parasites (e.g., mites) in the nostrils or nasal passages.⁴ However, the root of the problem may lie in the nervous system; trigeminal neuralgia,⁵ vestibular syndrome, and equine protozoal myeloencephalitis have been identified as causes. The ears should be thoroughly evaluated, including testing for mites (e.g., *Psoroptes hippotis*, *Psoroptes cuniculi*), a foreign body, aural neoplasia, otitis media, and otitis interna.^{3,6} Skull radiographs (lateral and ventrodorsal views taken with the patient under general anesthesia) are needed to rule out fracture of the petrous temporal bone. Endoscopic examination of the upper airway, including both guttural pouches, is imperative to rule out guttural pouch disease (e.g., temporohyoid osteoarthropathy). An ophthalmic examination should be performed to rule out photophobia or photosensitivity, cysts of the iris, uveitis, retinal lesions, prolapsed lenses, or any other ocular disorder that could cause the patient distress.⁷ Clinicians may tend to initially focus on the head, but pain in the neck caused by problems such as myositis or bony exostoses (e.g., on the external occipital protuberance) or cervical vertebral pain can also lead to head shaking.⁸⁻¹¹

Photic head shakers exhibit increased head shaking when exposed to more light, such as being outside on sunny days during the summer, and have decreased head shaking when in a darkened, indoor environment. Some photic head shakers respond well to cyproheptadine at a dosage of 0.3 mg/kg PO q12h.¹²

Bits have long been accepted as the standard way to control horses. The use of bits and reins involves a combination of pressure against the horse's mouth to manipulate the position of the horse's head. However, the use of a bit in horses, and manipulation of the horse's natural head carriage, can affect respiration because horses are obligate nasal breathers. In typical riding, decreasing speed or stopping requires pulling on the reins so that the horse's neck is flexed. This can interfere with respiration, especially with extreme flexion of the neck, such as in dressage.¹³ In any style of riding when the horse is asked to exercise while the rider uses the reins and bit to flex the horse's neck, respiration is impeded; however, the horse needs to breathe more rapidly as a result of exercise. Therefore, some horses begin tossing their heads to be able to breathe more quickly. In addition, when carrying riders who use the reins and

bit for balance, the horse must keep its neck muscles rigid to maintain any degree of extension. Chronic use of inappropriate bits, inappropriate riding techniques, or excessive flexion can result in classical behavioral conditioning. Thus, it is not surprising that horses in these circumstances shake their heads and that the mere presence of the rider on the back or the bit in the mouth can lead to anxiety, with consequent head shaking.

If the many differentials for head shaking have been ruled out and the history indicates that the disorder may have developed from the inappropriate use of bits, retraining may be necessary. Ideally, the horse should be changed to a bitless bridle, such as described by Cook.¹³ Other options are to change to a mild bit (e.g., a wide, broken snaffle) and have an experienced trainer address the rider's technique. Before resumption of riding in this new fashion, counterconditioning might be beneficial. For example, place a bridle with a gentle bit on the horse while allowing the horse to experience something that it enjoys, such as grooming. Bit- or rider-related head shaking can be prevented by experienced trainers encouraging beginner riders to learn how to use the bit lightly.

Nonmedical Problems

Some horses head shake only when people reach for their heads, with or without an object such as a bridle or brush. Often called *head shy*, these horses have usually developed classical behavioral conditioning to fear the approach of human hands. The use of systematic desensitization as well as counterconditioning can be very beneficial for improving a horse's conditioned response to an approaching hand. For example, identify how closely a hand can be moved toward the horse's head without the horse tossing its head or even showing an anxious facial expression. Remember that the following factors may also be relevant: the speed of movement of the hand,

the exact location on the head that the hand is moving toward, the presence of certain objects in the hand, and the presence of human speech as the hand approaches. To countercondition the horse, identify the ways in which a hand can approach the head without the horse showing anxiety, then repeat these motions while offering highly palatable food (e.g., grain, apples, carrots) in a bucket held under the horse's chin. If necessary, feed the horse its daily portions of grain while conducting desensitization sessions. Grooming, especially gently on the withers, can also be an effective counterconditioning method. For horses that have developed a strong fear of

Key Points

- Head shaking in response to flies is a normal, protective behavior in horses.
- Excessive head shaking can make riding a horse difficult or even dangerous.
- Head shaking has many causes, including medical disorders, traumatic injury, environmental stimuli, learning, and compulsive disorder.

human hands as a result of abuse, many weeks of counterconditioning may be required to resolve the problem.

Behavioral causes such as CD should be considered if no medical abnormalities can be identified and the horse shakes its head regardless of the presence of a bit in its mouth, a rider on its back, flies, hands reaching toward its head, or other environmental factors that might induce head shaking.^a At this time, the most economical medication that can benefit horses with CD is fluoxetine at a dose of 0.25 to 0.5 mg/kg/day PO. Use of medication should be combined with a complete review of the horse's environment and history, focusing on possible stressors. As much as feasible, stressors should be eliminated. Also, the horse should be kept on pasture for a minimum of several hours a day with compatible horses. The horse's diet should be reviewed to ensure that it contains adequate roughage.

CONCLUSION

Head shaking is a complaint, not a diagnosis. There are many causes, including medical disorders involving any part of the head or neck, traumatic injury to the head or neck, environmental issues (e.g., being struck in the face or being ridden by persons who use the reins and bit improperly), and CD. If a medical cause is identified, treatment may lead to improvement of head shaking. If it is due to a behavioral cause, appropriate treatment, including retraining and counterconditioning, may decrease or eliminate this behavior.

^aSee "Understanding Behavior: Stereotypic Behavior and Compulsive Disorder," *Compendium Equine* (June 2008).

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