

## A PLETHORA OF POSSIBLE CAUSES FOR THIS PERPLEXING PROBLEM

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‘Headshaking’ is one of the most distressing, frustrating syndromes from which horses can suffer – and often leaves vets, owners and riders shaking their heads! Many conditions can cause headshaking, but by a process of elimination the exact cause in an individual horse can often be found and the range of treatment options explored. Keep in mind that successful treatment depends on careful assessment and sometimes a trial and error approach. The fundamental requirement when confronted with headshaking is a detailed history, careful observation and heaps of patience, perseverance and persistence – in other words don’t give up!

Headshaking can present with a variety of clinical signs and the following examples may be familiar to you:

- Occasional head toss, episodes of intense head shaking or constant head shaking
- vigorous, violent head shaking at any time, even while eating
- striking the air during trotting, getting very light in front
- Flipping the head up and down
- Rubbing the nose and muzzle on front leg, gates, walls and fences
- Head up with a tilt, stiffness in neck
- Choppy front leg movements
- Head may be moved up and down, side-to-side or even in a rotary fashion
- May show pain when touched at the base of the ears
- ear- shaking progressing to head flicking then involving the neck, chest and forelimbs, with abrupt stopping and biting (not rubbing his nose) behind the knee – one foreleg may be worse than the other
- snatching of the front legs up to the belly as if trying to knock a fly off
- teeth grinding
- droopy nostril, occasional muscle twitch and standing with back legs crossed
- No head shaking, but getting angry and slinging the head
- Tense upper eyelids drawn upwards, corners of mouth drawn back, nostrils flared.
- **Head** and neck waving during daylight hours
- May frequently rest head against objects
- Can have frequent sneezing, unhappy face, ears held down
- May occur only while being ridden
- May get worse as exercise session progresses
- May occur only in sunlight
- May be seasonal
- May occur only with poll flexion
- Eye injuries may occur secondarily

All of the above have been associated with headshaking syndrome.

In another reported case, the horse was fine in his stable, but began the behaviour when he walked onto the rubber mats in the arena – leading the owners to check for stray voltage!!

Headshaking is a well-recognised, relatively common problem and usually occurs in middle age hunters and geldings – but can be seen in any age, sex, or breed. Analyses of the reported cases and research studies reveal that headshaking can develop at any age and that twice as many males were affected as

females; 64 per cent of the horses shook their heads seasonally and geldings were more likely than mares to be seasonally affected. More than 60% of horses with head shaking have problems related to increased light. The condition may be similar to a human disorder where light stimulates an itchy or painful nerve reaction in the head, with or without sneezing. Seasonal headshaking tends to be significantly worse on sunny days but improves on rainy days, windy days, at night and indoors.

Unfortunately it can be a repeating pattern over many years or perhaps the life of some horses. Light plays a role as a stimulus in some, as does exercise and sometimes sound. There is also evidence that it is found more frequently in highly trained horses - especially high level dressage horses. Headshaking, like heel pain, can be somewhat of a black box, in terms of causes – and there are some cases we can figure out and help, and others that are more elusive.

So let's have a look at the possible causes.

**1. Nerve pain: Photic headshaking:** The most common clinical signs of photic headshaking are **shaking** the **head** in a vertical plane, acting like an insect was flying up the nostril, snorting excessively, rubbing the muzzle on objects, having an anxious expression while **headshaking**, worsening of clinical signs with exposure to sunlight and improvement of clinical signs at night. However, 'light' is the stimulus and not the "cause". The cause is neuropathic pain (tingling, itching, shooting type electric pain) in the muzzle area, mediated via abnormal function of the facial nerves. Where light is thought to trigger pain in the trigeminal-facial nerves, some relief can be gained with masks.

**Other:** Light doesn't account for all cases of headshaking that are secondary to nerve pain. Burning, tingling, itching and electric-like sensations in the face and muzzle may be due to other stimuli, including: exercise, post-viral neuritis (usually herpes virus), sound, feed, smell, high ambient temperature, sweat, body heat, bit problems (persistent pressure of the bit on the bone of the mandible),

2. **Respiratory – throat problems:** intermittent head tossing can occur with periodic entrapment of the epiglottis, in the absence of other signs usually associated with throat conditions, such as noise and breathing irregularities; inflammation of the nasal passages and sinuses.
3. **Middle Ear Diseases/guttural pouch conditions:** including fungal, bacterial and viral infections, thickening of the stylohyoid bone, fractures of this area and ear mites – carried by rabbits (especially if several horses in the same paddock are affected simultaneously)
4. **Dental problems, mouth ulcers:**
5. **Allergies:** The respiratory system is the first point of contact for dust, mould, micro-organisms and grass pollen. Allergies are a symptom of inappropriate or exaggerated immune reactions. 'Environmental' causes include anything and everything in the horses environment, including tack, saddle and skin shampoos, stable bedding, insects, parasites, dust and fungal spores, feeds and pasture. In addition, cases of horses reacting to their owners deodorant, perfume or after-shave and to semen extenders used in artificial insemination have also been reported!

## DIAGNOSTIC INVESTIGATIONS:

Treatment in undiagnosed cases is frequently unrewarding, so it is worth seeking veterinary advice. The range of tests required to investigate all probabilities is exhaustive and can be simplified considerably if a detailed history is kept – so do make notes on any events or changes you observe. Tests which may be necessary to achieve a diagnosis include the following:

- exercising the horse in the near dark
- physical examination
- ophthalmic and otoscopic investigation
- endoscopy
- blood tests
- nerve blocks
- radiography

## TREATMENT AND MANAGEMENT STRATEGIES:

**Light reduction:** Light is the stimulus in approximately 30% of cases and can be controlled to some extent with the masks or goggles to block UV light by 86% to 95%. In some horses auditory stimulus or grazing stimulus produces activity in the nerve and exercise is the trigger for onset of headshaking in other cases - without a rider or any gear - just movement of the horse. These horses may respond to a nose net.

**Tactile stimulation:** One other "trick" is to see if the horse responds to tactile stimulation of the muzzle area. Dangle something from the noseband - a fly veil attached to the noseband instead of the browband. It should be something with a little weight to it so the horse will feel it tapping the muzzle. This can also be somewhat diagnostic - if a horse responds, it's a light-sensitive or photic head shake – but not all photic head shakers will respond. The cloth on the nose was first described in 1897 for a **headshaking** cart horse in New York City – why does it work? The same way as putting a finger under your nose to prevent a sneeze, nerve impulses block the nerve-associated sneeze inputs.

Others have produced a similar effect by placing a stocking over the nose and lower face.

Some horse can be improved with pressure on the muzzle area - nylon panty hose over the nose once helped a dressage horse which shook it's head about 20-50 times per 5 minutes under saddle – but only in the day time and not when he at pasture - when ridden at night under full moonlight he was perfectly normal!!

**Pharmacological:** Two drugs have shown to be often effective: cyproheptidine and carbamazepine. Cyproheptidine should be tried in the case of photic headshaking. Even if the headshaking does not appear to be photic these two drugs separately, then together, should be give a trial course. If the horse worsens with increasing light levels the chance of success is greatly increased. Improvement occurs within 24 hours of starting treatment, but withdrawal times must be observed for competition horses. Hydroxazine (Atarax) works on some horses and other drugs, such as fluphenazine can have side effects.

For horses with a history of no **headshaking** in winter, melatonin can be started towards the end of spring, placed on a sugar cube and given between 5pm and 6pm has been effective in some cases. It is thought this mimics winter time conditions. It may affect mare reproductive function and winter coat shedding.

**Acupuncture:** no successful outcomes have been reported to date and a survey of owners of **headshakers** who tried acupuncture did not consider it effective.

**Topical treatments:** these may include steroids, antihistamines and enzymes. The ointments are applied to the muzzle and internal nasal cavity. It is best to cover this with plastic (cut holes for the nostrils) and leave on for 45 minutes to an hour. In humans a skin graph is often performed following this with no other treatment. Drug absorption may affect swab results and if you are competing, it is wise to obtain information on withdrawal times.

**Bit changes:** hypoxia may also be a cause of **headshaking** and arises, in part, from a horse being exercised with its **head** in a position of marked poll flexion. Bridles that avoid excess pressure on the nasal area and that control by means of poll pressure rather than poll flexion may be useful. Advanced dressage performances are possible with the bitless bridle and, for competition purposes, a show bridoon bit can be hung from the bridle as a 'dummy'.

**Antiviral therapy:** non-photic headshakers may be having a hyper-immune reaction to encysted herpes virus in facial nerves and a combination of chiropractic and immune stimulants can be successful. Multiple treatments may be required.

Other nonspecific treatment that has occasionally been helpful is corticosteroids and these can be inhaled. This is most effective for allergic rhinitis. Fly masks that cover the ears may help in other cases.

Surgery may be a last resort and consideration given to an infraorbital neurectomy. However, the success rate is low and a transient period of self-inflicted trauma of the muzzle was a common complication of this surgery.

A recent study sparked by clinical success in human medicine, involves use of a protease enzyme which affects immune function, macrophage activity and fibrinogen – all components of inflammatory responses. Given orally as a liquid and applied topically as an ointment to the muzzle, nasal cavity and infraorbital foramen, this enzyme is also being used to treat sarcoids and other skin cancers in horses with early results showing exciting promise in cases which have not responded to intense surgical and medical intervention.

Veterinary consultation is important in horses with headshaking as there are a range of causes and treatments. It is essential to rule out guttural pouch, eye, dental, respiratory and ear problems to enhance the chances of a successful treatment outcome.