

# THE EFFECT OF THE BIT ON THE BEHAVIOUR OF THE HORSE

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## Summary

**In a study of behavior, a survey was carried out of 440 written reports from riders who had switched from a bitted bridle to a new design of bitless bridle. Essentially, the comparison was between an invasive and painful method of control (a bitted bridle) and a non-invasive and painless method (a bitless bridle). The unprecedented opportunity to switch a horse, overnight, from bitted to bitless control revealed many new and serious manifestations of the syndrome 'aversion to the bit.' The survey demonstrated that the bit is responsible for at least 50 problems. The four most frequently cited effects were to instill fear, to make the horse fight back, to trigger a flight response, and to cause facial neuralgia (headshaking). These and other behavioural effects were associated primarily with oral pain. However, the responses were not limited to the oral cavity, for they included a whole cascade of systemic effects. Predominantly, these involved the nervous system and resulted in adverse behavioural responses (58%). Musculoskeletal system effects interfered with locomotion (26%) and respiratory system effects caused dyspnoea (16%). It was concluded that a bit is harmful to the health and safety of both horse and rider, and an impediment to performance.**

## Introduction

In the last six years, a new design of bitless bridle ( The Bitless Bridle )[\[1\]](#) has been introduced. The new bridle can be used on horses in all disciplines and is not limited to those trained in Western as opposed to English style equitation. It is usable by riders of all ages, on horses of all breeds, types and temperaments and there is virtually no learning curve for either horse or rider. Because the same horse can be switched instantly from bit to bitless control it has provided an unprecedented opportunity to identify the bit's adverse effect on behaviour.

The bit is an invasive method of control and potentially painful, whereas the new bitless bridle is non-invasive and painless (Cook, 1999, 2000, 2002). Similarly, the bit method of control is not compatible with the physiological requirements of an exercising horse for breathing and striding, whereas the new bitless method is compatible (Cook 1999). Because of this there is usually a marked contrast in the behaviour of a horse when the two methods are compared, serving to highlight the behaviour patterns associated with the bit.

The opportunity to dispense with the bit, overnight, in a large series of horses that had previously worn a bit, generally for many years, has shown that we have underestimated the frequency and diversity of the adverse effects on behaviour attributable to the bit method of control. It transpires that these effects are more extensive and more serious than previously recognized. If asked to compile a list of the problems included in the term 'non-acceptance' or 'aversion to the bit' most horsemen would probably cite half a dozen problems. This study, however, has shown that the number of problems is at least 50 (Table I). The purpose of this article is to document this information.

By far the largest category of behaviour effects associated with use of the bit can be assigned to pain. This changes for the worse a horse's whole attitude to exercise. A smaller but nevertheless still serious category is composed of those effects that interfere with locomotion. A third category is composed of those effects that interfere with respiration. The evidence indicates that pressure exerted on a thin rod of metal in the oral cavity interferes with just about every major system of the body except perhaps the reproductive system (Cook 2000).

The anatomical and physiological explanations for the behavioural signs caused by the bit have been described in a series of articles (Cook 1999, 2000, 2002)

## Materials and Methods

A list of the adverse behavioural signs that have disappeared following removal of the bit were compiled from the written and mostly unsolicited reports received from users of the new bitless bridle. [2] The reports were collected over a period of six years from 1997-2002 inclusive. Reports were received from 440 riders, on 535 horses, and the total text comprises c.150,000 words. The full text of each report is available online, where the reports have been sorted according to discipline, breed, and to some extent by category of sign. Just about every discipline was sampled, from trail riding to racing and from dressage to eventing. Numerically, the collection is considered to be reasonably representative of the domestic horse population in the USA. Horses placed in a category of 'general equitation' accounted for 249 (47%), 'trail riding and endurance' accounted for 147 (27%) and, collectively, the remaining disciplines accounted for 139 (26%). The actual bits removed have covered the spectrum of designs from snaffle to leverage bits, and from single bridles to double bridles. As an old medical adage states that nothing ruins results more than long-term follow-up, one section of the online text is compiled of multiple reports from the same person over an extended period of time. These might, for example, consist of seven reports about the same horse over a period of twelve months.

In many instances, the exact words and phrases that owners used when describing their horse's behaviour prior to removing the bit have been recorded. Vocabulary usage being imprecise there is, inevitably, some overlapping of descriptive terms. A list of problems was compiled, in order of frequency of occurrence, and classified according to the category under which they can be said to exert their primary effects (Table I).

Supplementary evidence came from a survey of *Equidae* skulls in the collections of three Natural History Museums.

## Results

Removal of the bit eliminated all of the adverse behavioural responses and clinical signs listed below. In other words, what follows is a list of problems that have been demonstrated to have been caused by the bit. The majority of problems have been solved on multiple occasions. The frequency with which each problem was solved is documented in Table I, where the problems are classified according to the primary system affected. The problems can also be classified, as follows, according to the situation in which they occurred:

1. In the stable when tacking-up
2. During mounting
3. During the schooling of a 'green' horse
4. During exercise
5. After exercise

*In the stable when tacking-up.*

- Suspicious attitude towards anyone approaching in the stable. Standoffish. Avoids eye contact. A 'cat-like' attitude. Nervous behaviour. 'Highly-strung.'
- Panic attacks at the very sight or sound of a bit when about to be bridled. For example, backing away from the handler, putting head in air, growing tall. Clenching teeth, refusing to open mouth. The determined resistance that some horses developed to being bridled with a bit resulted in long delays to the start of exercise and high stress levels in both rider and horse. A few horses become so shy that they could no longer be handled anywhere around their mouth. Others appeared to become shy when handled around the ears, in the process of drawing the bit into the mouth. One horse refused to take the bit for the first time on day four of a seven-day trail ride and consistently balked at the bit thereafter. One young Thoroughbred in training required two men to hold her when she was tacked-up. Another Thoroughbred that reared up in the starting gate (possibly because of bit pain) refused to allow a bridle on its head subsequently<sup>[3]</sup>.
- Resentment to the touch of cold steel, especially in winter. Flinging head in air.
- Yawning and head tossing started as soon as the bit was placed in the mouth. Champing on the bit. Grinding of teeth
- Failure to show eagerness at the prospect of exercise (the horse equivalent of a dog failing to get excited at the prospect of a walk)

#### *During mounting*

- Refused to standstill, much fidgeting and fussing
  - Stood still but horse was tense, with ears pinned
  - Took-off before the rider was properly in the saddle (with risk of accidents and perhaps a loose horse)
  - Reared-up as soon as rider gathered the reins and prepared to put foot in stirrup
- *During schooling of a 'green' horse*
  - • Comments in this section are of a general nature rather than referring to specific signs
  - Slow progress with training. Progress sometimes ceased altogether because of increasing bit resentment. In many cases, schooling was unnecessarily prolonged because of the problems caused by the bit
  - Problems caused by the bit seemed particularly likely to occur when schooling was commenced early in a horse's life during the 'teething' period, anytime up to five years of age
  - Conformation defects such as parrot mouth and bulldog mouth were reported to make horses especially unreceptive to being bitted
  - Horses that owners believed to have 'shallow arches to the roof of their mouth' (the hard palate) and 'large fleshy tongues' were said to be more difficult to bit

#### *During exercise*

- Bad attitude to exercise overall. In some horses this was expressed as an absence, slowness or hesitation in responding to the aids. In others it resulted in 'goosey behaviour', a trigger response to the aids, and often a response that was the diametric opposite to that which was requested. Even the slightest pressure on the rein, for example, resulted in a panic attack followed by high-speed flight. Some horses were previously known as unrepentant 'bolters' or acted up so much in other ways that they were regarded by their owners as dangerous to ride
- A lack of any spirit of cooperation or sense of partnership between horse and rider. Lack of trust or courage on the part of the horse. Every ride involved getting into a fight with the horse. Inevitably, this often turned into 'yelling and cursing' matches.

- 'Nappiness': a wish to return to the stable at the first opportunity and as quickly as possible (bolting towards home).
- Lack of energy. Premature fatigue and absence of 'drive'. Laziness. One pony that refused to trot in the ring was accused of being 'ring sour.' Another pony was always considered to be looking for excuses not to work
- Failure to enjoy work; ears pinned back some or all of the time; tail flashing and winding.
- Tenseness; panic attacks; a general nervousness; jitteriness; excitability, anxiety; fussing and fidgeting. Horses were described as having a tendency to 'explode', to 'go rubber' in your hands', to become 'like jelly' or to become 'unglued.' Others that got 'worked-up' were described as being 'high-spirited' or 'too spirited' when, in fact, they were just nervous and apprehensive
- 'Fighting the bit.' An inclination to 'argue' about every aid
- Hypersensitive responses to the aids, often followed by rushing forward or backward, taking-off, or frank bolting.
- Unwillingness, unhappiness, stubbornness, fighting the rider all the time. Such a horse was often labelled as being 'opinionated' and 'bossy' and the rider complained that the horse could not be controlled without it becoming hot and resentful
- 'Barn sour' attitude. Such a horse became 'pesky' or 'cranky' after a little exercise and was no longer willing to work, perhaps being inclined to head for home. Others developed behaviour that riders interpreted as a message to the effect that? "Its time you got off." A few horses became aggressive and developed a positively dangerous attitude to work. Some became unrideable
- Shying: a tendency to spook easily and to recover slowly. Some horses spun round and fled at the slightest provocation. Understandably, the spook often unseated the rider and, as a result, balance tended to be regained by using the reins. This resulted in the horse getting hit in the mouth, the pain of which confirmed the horse in his suspicion that whatever caused him to spook in the first instance was indeed harmful to his health and well-being. Now he has a second reason to 'take-off' and the next time he sees the same 'monster' he spooks even more readily. The problem becomes exacerbated. [\[4\]](#)
- Inattention to the aids; unresponsiveness or slowness to respond
- Lack of focus. Failure to 'listen' to the rider. Focussed all its attention on its mouth, with much chomping, champing and general fussing.
- General discomfort with surroundings and with rider.
- Loss of alertness during a trail ride and the development of a 'hangdog', 'dull', 'hectored', or 'unhappy' expression. This developed, in particular, when there were no other horses in sight and the horse now focused on the pain in its jaw. Such horses were often thought by their riders to be lacking in energy. (This may, in fact, be true as few things will sap our energy quicker than constant pain. We know how we feel with a headache or, to give an example closer to the sort of pain that the bit must produce, a toothache. [\[5\]](#))
- Aversion to and intolerance of children. The young child or novice rider lacks an independent seat and, using the reins to balance, bangs the horse in the mouth without mercy. This resulted in bucking, rearing, bolting etc.,
- Apprehensive. The expectation of pain sapped a horse's confidence and courage. Such horses were often labelled as lacking in 'forwardness' or as 'untrustworthy.' At fences, a horse made nervous of being hurt by the bit, would suddenly, and for no obvious reason, shy, run out, or, refuse [\[6\]](#)
- On first going out on a trail, a bitted horse was reluctant to move away from the home paddock and moved in a zigzag fashion rather than a straight line.
- Because of bit-induced fractiousness and nervousness, horses took a long time to settle down. Some horses would shake their heads constantly for the first 5 or 6 miles of a trail ride. Others were described as going through a 20-minute period of 'I'm in charge.'
- Relentless jiggling on a ride and refusal to walk and relax. Conversely, a horse needed prodding to persuade him to move from a trot to a canter. At the end of a ride, such a horse was far hotter and sweatier than the rest of the horses.

- Failure to stand-by, in the event of a rider suffering a fall. Riders who retained a grip on the reins during a fall would, inadvertently, often give their horses a tremendous blow in the mouth. The pain and shock from this increased the likelihood of them taking flight.
- On the racetrack, many bitted horses were regarded as 'difficult' rides and others were known as inveterate pullers or bolters. One horse was described as 'a lunatic' and an 'outlaw.' This same horse reared-up constantly in the starting gate and had put a number of riders in hospital. The horse 'terrorized all about her' and was always covered in sweat on return from work. [7] Another horse that tended to 'lose its mind' was further described by its trainer as 'spooky, hot, spirited, dangerous, hell-crazy, blown-mind, and untrainable.'
- One owner was advised that the nervous, strong and almost uncontrollable horse she had was 'not worth keeping.' When trying to buy yet another bit for the same horse, a tack shop proprietor told her "Don't sound like a bit is gonna solve your problem - and we don't sell guns.+"
- Lack of flexibility in the neck. Difficulty, reluctance or resistance to turning.
- Tenseness in the neck and back resulted in a short choppy stride ('stiff action') or an uncoordinated, clumsy, gait. In some cases, this led to a mistaken diagnosis of equine protozoal myeloencephalitis.
- Short stride and, therefore, slow speed at all gaits.
- Reluctance, hesitation or resistance in responding to the cue for halt or half-halt
- High head carriage ('braced')
- 'Locked' jaw, as means of fighting-the-bit
- Above the bit. Head high and outstretched. 'Poked the nose' and put the bit 'between its teeth' (or, as seems more likely, placed the bit against the rostral edge of the first cheek teeth, where it caused less pain). Alternatively, some horses held their heads low and in extension so that the same relief could be obtained this way.
- Refusal to back-up, some reluctance to do so, or an inability to back in a straight line. Conversely, some horses went into rapid reverse gear without being asked.
- Inability to walk, trot or gallop in a straight line (lugging in or out). As a corollary to this, some horses 'interfered' (hit the front hoof with the hind hoof on the same side)
- Bucking, sometimes accompanied by spinning
- Rearing, sometimes followed by a complete somersault ('flipping-over backwards') [8]
- Balking (refusal to take the bit)
- Lower lip slapped up and down, noisily
- \*Head shaking, head tossing, head flinging, head slinging or a throwing-up of the head [9]
- \*Evasion of rein contact by head tossing, ducking away from the bit etc. One such head-shaker was likely to walk into a wall during one of these frenzies; another would, apparently by choice, run into another horse before stopping.
- \*Sneezing and nose-blowing
- \*Dropping the head to rub the muzzle on the fore legs
- \*Striking at the muzzle with foreleg
- \*Photophobia; hypersensitivity to bright light
- \*Blepharospasm; rapid and noisy blinking
- \*Eating on the run ('grazing on the fly'). Snatching at shrubs and trees in passing &/or suddenly dropping the head to snatch at a mouthful of grass, pulling the rider out of her seat in the process
- Failure to collect, hollow back, 'strung-out' and head high, 'inverted frame'
- Absence of hind-end impulsion ('sucking-back off the bit')
- Open mouth ('gaping')
- Frothing at the mouth, drooling and slobbering of saliva (blood-staining of the saliva is possible, though this was not reported in this series)
- Laryngeal stridor ('thickness of wind', 'roaring'). If the airway obstruction was intense, this was accompanied by laryngeal fremitus detectable on palpation immediately after exercise (Cook 2002).

- Elevation or dorsal displacement of the soft palate ('Choking-up', 'gurgling' 'swallowing the tongue') (Cook 2002)
- Constant tongue movement
- Tongue lolling
- Tongue over the bit. This was one evasion associated with the habit of 'leaning on the bit'
- Constant jaw movement, chomping and champing at the bit ('bit gnashing')
- Overbent ('behind the bit'), exaggerated poll flexion
- Rooting at the bit ('gagging' or 'yawing'). A stretching out of the neck accompanied by jaw movements, sideways and vertical. Described by some as a yawn that doesn't quite make it. Particularly likely to occur when bit pressure was increased. The evasion probably resulted in the bit being placed against the rostral edge of the first cheek teeth.
- 'Leaning on the bit', heavy on the forehand, 'imbalance', lack of self-carriage. Horses may, it has been suggested, lean on the bit in order to prevent it from pressing against the hard palate (Clayton1999)
- Constant 'jigging' (refusal to walk and relax), sometimes accompanied by 'side-passing'
- Excessive sweating and lathering-up
- Premature fatigue. Stumbling, sluggishness and a general loss of interest in work. Recovery from a stumble, as from a spook, was often slow
- Slow downward transition. Threw-up head (head tossing) during 'departs', when moving from a trot to a canter
- Head tilt and twisting of neck
- A general lack of forwardness and absence of courage
- 'Breaking' at the canter and returning to the trot
- Disinclination to gait or to stay in gait once achieved
- Failure to relax and work calmly with moderate rein pressure, yet a 'death-grip' on the reins provoked panic attacks, and a loose rein amounted to no control at all.
- Pulling
- Unwilling to be rated at the canter, or to canter at one steady speed. 'Rein-backs' accomplished only with resistance. Alternatively, showed a tendency to buck at the canter when checked
- Unfocused, fussy and fidgety, inclined to 'fight the bit' and be fractious
- Failure or disinclination to drink during trail rides, leading to dehydration and loss of 'condition.' Presence of a bit breaks the seal of the lips and renders it difficult for the horse to generate the necessary intra-oral vacuum for drawing fluid into the mouth. This may render the intake of water inefficient and insufficient or, together with pain in the mouth, may be enough to discourage a horse from drinking altogether
- Failure or disinclination to eat during trail rides
- Failure to prick ears, tail wringing ('flashing')
- Inability or refusal to lead on the correct leg, or to change leads
- Coughing at the start of an exercise period
- Persistent, explosive coughing as a complication of a laryngoplasty operation
- When going uphill, a horse would put its head down and 'pull itself up with its fore legs', rather than pushing with the hind legs
- Refusal to stretch down on a loose rein (anticipating painful bit contact)
- Tying-up at exercise
- Head thrown-up, when a horse was checked at the approach to a jump. This resulted in a lack of focus, accidents and poor jumping performances. Some horses stalled and refused as a result of the pain that caused them to throw up their heads in the first instance
- Excessive nervousness when asked to jump (for fear of getting hit in the mouth)
- Stumbling, falling, or 'taking-off' (bolting) on landing after a jump

*After exercise*

- Roaring and laryngeal fremitus, detectable when first coming to rest
- Difficulty in removing the bridle (head throwing, 'spitting the bit'). Horses expressed fear of the bit rattling against the incisor teeth
- Grinding the teeth or grinding on the bit
- \*Rubbing muzzle and side of face on handler
- Inappetence for a day or so, resulting from a sore mouth

#### *Osteological evidence.*

A survey of horse skulls provided tangible evidence of the source of the pain that the bit inflicts. From 65 adult *Equus Caballus* skulls (five years old or older), 75% had bilateral exostoses on the dorsal surface of the diastema (Cook, 2002). The position of these bone spurs, in an area devoid of tendinous or ligamentous insertions, made it apparent that they were caused by the bit. A survey of 35 adult zebra skulls (*Equus Burchelli* and *Equus Grevyi*) revealed no such exostoses and neither were any found in *Equus Caballus* skulls from known feral locations.

#### **Discussion**

Criticism may be levelled at the above evidence on the grounds that it is anecdotal but its value is defended for a number of reasons. Firstly, it represents for the most part the first-hand experience of riders about their own horses. Such people have had the opportunity to become familiar, often all too familiar, with the characters [10], idiosyncrasies and behaviour patterns of their horses, generally over a period of many years prior to switching to the new bridle. Any changes in behaviour are matters of importance to riders and will be immediately noticed, analyzed, and scrutinized for their validity and repeatability. As a class, riders can be relied upon to be highly critical of the performance of any new equipment. Riders themselves had nothing to gain from submitting their reports.

Secondly, each horse acted as its own control. The rider had used the same horse, with and without a bit, for the same purpose, under similar conditions, and within a short time frame. The improvement in behaviour following removal of the bit is so immediate and so remarkable that it leaves little room for doubting that there is a legitimate reason for assigning the improvement to removal of the bit, rather than to some other less obvious variable. Many of the reports were submitted after the very first trial.

Finally, in a number of instances, owners had carried out a double check by re-instating the bit for a further trial period, only to see the adverse behavioural signs return.

Table I serves to emphasize that extreme nervousness and fear is the most common effect of the bit (item #1). Understandably, many horses react to the bit with a fighting spirit (item #2). The third most common effect of the bit is flight (Item #3). The fact that so many runaway horses have been cured of the habit by removal of the bit, supports the view of many a good horseman that when faced with this problem riders should move to a less severe rather than a more severe bit ("less is more"). Obviously, the ultimate of 'less' is no bit at all. As the first three most common effects can be represented by 'fear', 'fight' and 'flight', the alliteration can be completed by noting that the fourth most common effect is facial neuralgia (Item #4: headshaking).

It is interesting to note not only the wide spectrum of signs but also their range of expression. For example, a spirited horse may respond to the pain of the bit by bolting, whereas another of a more phlegmatic temperament may simply stop trying and get accused of laziness. Some bitted horses held their heads too low though, more commonly, they hold their heads too high.

It is not claimed that the bit is the only cause of all these behavioural signs, though it is undoubtedly a major cause of most and the only cause of many. Both riders and myself have

been surprised to discover how often some problem that was previously considered intractable, has responded to the simple expedient of dispensing with the bit.

The adverse behaviour patterns caused by the bit can be classified under three headings:

1. Attitude
2. Interference with breathing
3. Interference with striding

Clearly, the root cause is pain, for pain is the factor that underlies all three (Table I). As horses don't scream, the pain is expressed visually (through body language) or by some change of function (breathing or striding). In Table I, each of the 50 items has been classified according to what is considered its primary effect. But in many cases, the item also has a secondary effect. For example, as breathing and striding are synchronized at the canter and gallop (Cook 1965), any interference with breathing will also interfere with striding, and vice-versa. Similarly, many of the body movements caused by pain will result in an interruption of the respiratory and locomotory rhythms.

A rewarding result of the report survey has been to demonstrate the frequency with which the bit appears to be the prime cause of what until now has been the notoriously idiopathic headshaking syndrome. This has been demonstrated many times (46 times, see item #4, Table I) by the convincing manner in which the headshaking problem has been eliminated by simply removing the bit. The evidence supports an earlier opinion (Cook 1998).

Until now, the numerous etiological hypotheses for the headshaking syndrome have been reminiscent of the parable poem about the six blind men trying to define the characteristics of an elephant. [11] Amongst others, the theories have included allergic rhinitis (Cook 1979a, 1979b, 1980a, Lane and Mair 1987), vasomotor rhinitis (Cook, 1980b, Lane and Mair 1987, McGorum and Dixon 1990), photophobia (Cook 1980a, Madigan and Bell 1998), dental pain (Cook, 1980b), upper airway obstruction (Cook 1992), equine protozoal myeloencephalitis. (Moore et al 1997), and neuralgia of the posterior ethmoidal/nasal branch of the ophthalmic division of the trigeminal nerve (Newton et al 2000). Now it seems that all the clinical signs associated with the cause of the headshaking syndrome (see asterisked items #4,34, 37, 39, and 44 in Table I) can, in the majority of cases, be more economically and inclusively explained as being consistent with bit-induced trigeminal neuralgia.

A unifying hypothesis can be put forward to the effect that pain sensations are referred centrally from the diastema of the mandible [12] via the mandibular branch of the Trigeminal nerve (cranial nerve V) but also spread rostrally by a process of 'talk-back' from the level of the trigeminal ganglion down the other two branches of the Trigeminal, the maxillary and ophthalmic branches. Acute pain referred directly to the brain accounts for the uncontrollable head tossing, whereas pain, itching or tingling sensations transmitted by the maxillary nerve to the region of the muzzle explains the muzzle rubbing, sneezing, and snorting. Similar feedback via the ophthalmic nerve explains the photophobia and blepharospasm. Such a hypothesis withstands the test of falsification, as removal of the proposed cause (the bit) proves to be a treatment that, in the author's experience, is infinitely more effective than any others that he has tried. This unifying hypothesis explains the etiology in the majority of headshakers but the author accepts that there may still be a minority of alternative possible causes.

Another bonus of the survey has been to demonstrate that laryngeal stridor ('roaring' and 'thickness of wind'), together with laryngeal fremitus, are clinical signs compatible with upper airway obstruction caused by bit-induced elevation of the soft palate (Cook 2002). In future, this has to be considered as a differential diagnosis for a disease that has previously been considered the most likely source of these signs, recurrent laryngeal neuropathy (Cook 1988). A corollary to



this is the realization that dorsal displacement of the soft palate is yet another problem of previously unknown cause for which the bit has to be held responsible (Cook, 2002).

A number of horses in the above survey had already undergone unsuccessful treatment for Equine Protozoal Myeloencephalitis (EPM). As the correlation between cause and effect of symptoms and disease in the case of EPM is difficult, it is possible that some horses showing signs such as incoordination caused by the bit were mistaken for EPM.

It would appear that whenever any one of the behavioural signs listed above is encountered, removal of the bit should be considered as an early line of approach to both diagnosis and treatment. But removal of the bit need not depend on the detection of obvious pain for even those horses that appear to accept the bit will also benefit from its removal. By dispensing with the bit we can improve the welfare of both horse and rider, reduce accidents and enhance performance.

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The author declares that he is the chairman of The Bitless Bridle Inc.,

### **Manufacturer's address**

The Bitless Bridle Inc., 2020, South Queen Street, York, PA, 17403-4829 USA

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#	PREVIOUS BEHAVIOUR OR SIGN THAT WAS SUBSEQUENTLY ELIMINATED BY USING THE BITLESS BRIDLE	Frequency of Citation	Deterioration in Attitude	Interference with Breathing	Interference with Striding
1	FEAR: Anxious, nervous, frightened, spooky, panicky, tense	68	+		
2	FIGHT: Argumentative, resistant, aggressive, bossy, cranky	62	+		
3	FLIGHT: Difficult to slow or stop, bolting	59	+		
4	FACIAL NEURALGIA: Headshaking, head tossing or head flipping*	46	+		
5	Hates the bit, chomping, champing, constant fussing	28	+		
6	Difficult to steer and lugging (failure to travel straight)	28			+
7	Difficult to bridle	25	+		
8	Above the bit (poking nose in the air), high-headed	25	+		

9	Lack of finesse in control, general 'unhappiness'	24	+		
10	Heavy on the forehead (leaning on the bit), low-headed	19			+
11	Lack of self-carriage, absence of 'collection'	19			+
12	Stiff-necked and locked-jaw (tongue over bit)	19			+
13	Uncoordinated and stiff or choppy stride ('bridle lameness')	18			+
14	Thick-winded, Roaring (tongue behind the bit)	15		+	
16	Gaping of the mouth (open mouth)	13		+	
17	Lacking in courage (not 'forward', refuses at jumps)	10	+		
18	Pulling on the bit	10	+		
19	Lazy, dull, or tires prematurely	10	+		
15	Bucking (and sometimes spinning)	9	+		
20	Behind the bit (overbent, over-flexed)	9		+	
21	Refusal to back-up or difficulty in backing-up	9	+		
22	Tilts head	9	+		
23	Salivating excessively (froths at mouth)	9		+	
24	Jigging and prancing when should be walking	8	+		
25	Unfocussed, fussy, fidgety	8	+		
26	Sweating excessively, hot and restless	7	+		
27	Stumbling	6			+
28	Rearing, with or without flipping over backwards	5	+		
29	Gurgling (choking-up), dorsal displacement of the soft palate	5		+	
30	Inverted frame (high head carriage, hollow back)	5			+
31	Stagnation in training, slow progress or none at all	5	+		
32	Difficult to mount, fidgety, tense, takes-off prematurely	4	+		
33	Trigger response to aids, hypersensitivity to the bit	4	+		
34	Coughing at the start of exercise	4		+	
35	Muzzle-rubbing at & after exercise, leg-striking at muzzle*	3			+

36	Refusal or reluctance to drink on trail rides	3	+		
37	Pig-rooting and yawing	3			+
38	Grazing on the fly (eating on the run), snatching at tree leaves*	2			+
39	Lip slapping (noisy flapping of lower lip)	2	+		
40	Sneezing & snorting*	2		+	
41	Stand-offish in stable (unfriendly)	2	+		
42	Tail swishing or wringing	2			+
43	Tongue lolling	2		+	
44	Yawning	2	+		
45	Blepharospasm (blinking, often noisily), and/or photophobia*	2	+		
46	Backing-up to avoid the bit	1	+		
47	Ear pinning at exercise	1	+		
48	Interfering with hind hoof	1			+
49	Reversing to avoid the bit	1	+		
50	Tying-up (exertional rhabdomyolosis)	1			+
<i>Signs that can occur but were not reported in the survey</i>					
51	[Bleeding from the mouth]	0			
TOTAL NUMBER OF PROBLEMS INDIVIDUALLY CITED		634			
FREQUENCY OF CITATION OF INDIVIDUAL PROBLEMS (out of 50)			29 (58%)	8 (16%)	13 (26%)

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Tel/Fax: (410) 778 9005 E-mail: [drwrcook@aol.com](mailto:drwrcook@aol.com)

[2] See Users' Comments online at [www.bitlessbridle.com](http://www.bitlessbridle.com)

[3] Conversely, these same horses, when they became accustomed to the bitless bridle, often developed the endearing habit of dipping their heads in to the bridle without being asked

[4] Conversely, with the bitless bridle, the horse is not hurt by the rider tugging on his head for a moment, so he recovers quicker from the fright and is much less likely to 'take-off'

[5] The mandibular branch of cranial nerve V supplies the bars of the mouth, gum, tongue, lips and teeth, with sensory perception and the modalities of pain and temperature (including itch and tickle). Pain from constant bone ache in the diastema of the mandible will probably be similar to the pain of toothache. The bit lies on the diastema immediately dorsal to the mental foramen.

[6] A cause of serious accidents and fatalities

[7] Once the bit was removed, a 110 lb boy rode the same horse without incident.

[8] Another source of fatal accident for both horse and rider

[9] This and the next seven asterisked items are part of the headshaking syndrome, together with the asterisked item in the ' After exercise' section below

[10] Many riders who had assumed that their horse's characters were inborn and unchangeable were pleased to discover, when the bit was removed, that this was not so and that their horses character underwent a remarkable change for the better

[11] "The Blind Men and the Elephant" by John G. Saxe

[12] Incidentally, this hypothesis suggests an explanation for the far greater prevalence of headshaking in males rather than females (Lane and Mair 1987). The root of the canine tooth lies close to the portion of the diastema upon which the bit presses. The presence of this root and its nerve supply would explain the increased sensitivity of males.

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