ON THE PENALTIES OF BITS AND THE BENEFITS OF BITLESSNESS[1]

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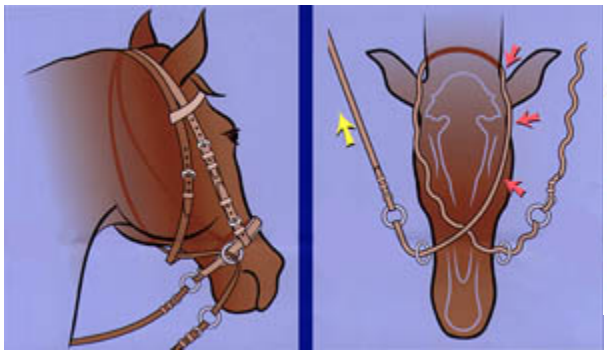
NON-ACCEPTANCE OF THE BIT

At exercise, does your horse:

- develop a sore mouth
- have dental problems (wolf teeth, buccal ulcers, teething troubles)
- shake or toss its head
- open its mouth
- flex excessively at the poll (get behind the bit)
- cross its jaws and yaw
- stumble and trip
- froth and foam at the mouth
- champ on the bit
- grind its teeth
- loll its tongue
- get its tongue behind or over the bit
- pull hard or bolt
- lug in or out
- constantly move its tongue
- gurgle or choke-up
- dorsally displace its soft palate
- roar (make a respiratory noise)
- have a short and choppy stride
- lack flexibility
- exhibit reluctance to work
- buck
- rear
- lean on the bit
- get heavy on the forehand
- have rough transitions
- get nervous and anxious
- lather-up excessively
- bleed from the mouth
- lack self-carriage
- or bleed from the lungs?

All of the above signs can be caused by the bit. Many of these signs are exclusive to bit aversion though some can be caused by a number of other problems as well. Nevertheless, it is true to say that the bit is the most common cause of many of these signs. It is also my belief that, when faced with any one of these problems, the rider should first '*think bit*'. Having done this, the next logical step is not to spend time and money in experimenting with an endless array of alternative

bits but to test this thought by exercising the horse without a bit. Riders will, I predict, be both surprised and delighted at the frequency with which this simple step will eliminate the problem.



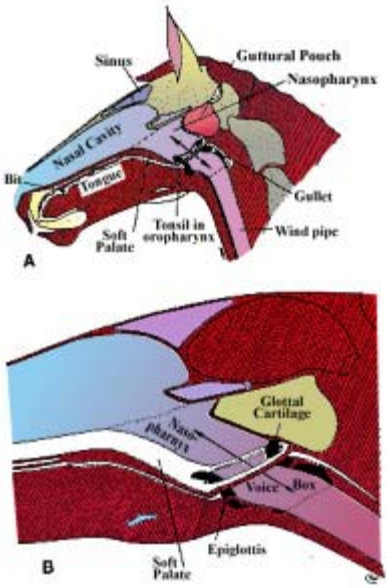


Fig 1. Showing how the Bitless Bridle applies pressure, in particular, across the poll, behind the ear, and down the side of the face. For steering, traction on one rein applies pressure behind the ear on the opposite side. For braking, using traction on both reins, the poll loop together with the noseband loop, enables the rider to put a benevolent grip on the whole of the head.

And let me assure readers that it is now easier and safer than you have ever imagined to control a horse without a bit. Such a statement is possible, thanks to a recent addition to the bitless bridle options. Riders are no longer limited, when considering a bitless option, to a choice between the bosal, the hackamore and the sidepull. These all have certain drawbacks and are not suitable for every horse or every situation. The new bitless bridle works on an entirely different principle to all three of these bitless bridles. Instead of controlling a horse primarily by applying pressure on the nose, the new bridle (known as the Bitless Bridle) controls primarily by exerting pressure on the poll and, particularly, by exerting pressure on a cluster of acupressure points behind the ear (Fig 1). Furthermore, this new bitless bridle has none of the limitations of the previous three bitless bridles and is applicable to all horses and all equestrian activities.

I will come back to the bitless bridle later but first let us take a fresh look at what a bit does to a horse and why this piece of Bronze Age technology is contraindicated on physiological grounds, counter-productive as an aid to maximum performance and, in the wrong hands, potentially cruel. The serious disadvantages to the use of a bit for controlling a horse at exercise can be listed under seven headings.

1. All bits are painful and some bits are more painful than others:

The mouth is a body cavity and, together with the lips, gums and tongue, this is one of the most sensitive parts of the horse's anatomy (Fig 2). Not only is it an exquisitely sensitive region with a huge number of sensory nerve endings per square inch but it is

Fig 2. A: Showing where the bit lies in relation to the anatomy of the head. The front end of the double-ended arrow lies in the throat (*nasopharynx*) and the back end in the voice box (*larynx*). The horse is a nose-breathing animal.

B: An enlarged and perspective view of the throat and larynx to show the manner in which the airway is dependent on an elastic-sided button-hole in the soft palate

also generously supplied with pain receptors. The horse, by its very nature, is a cooperative animal. It will cooperate with man more willingly and with better grace if it is not being hurt.

2. A horse should not be expected to eat and exercise simultaneously:

As soon as a bit is placed in a horse's mouth, eating reflexes are initiated. Yet, the next minute, the horse is set in motion and deep-breathing reflexes are initiated. Man is simultaneously stimulating two mutually exclusive physiological activities. The nervous system controlling the eating response is diametrically opposed to the nervous system controlling the flight response (Fig 3).

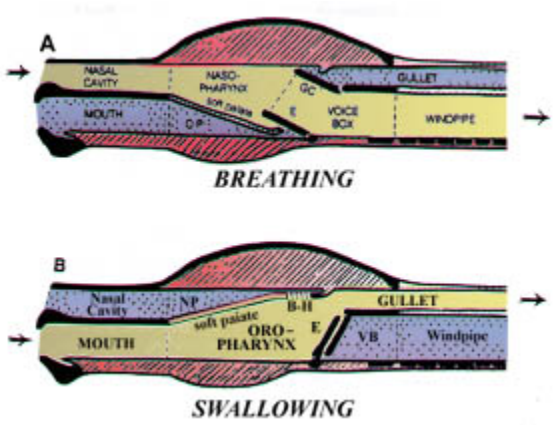


Fig 3. Diagrams to show the switches that take place in the throat and larynx to enable this region to serve the two functions of either breathing or swallowing.

SP = soft palate; E = epiglottis; AC = arytenoid cartilages (the 'flappers');

OI = ostium intrapharyngium (the button-hole in the soft palate)

A bit in the mouth results in a cascade of reflex activities connected with chewing, swallowing and digestion. The lips are parted and become mobile, the mouth is opened, the tip of the tongue constantly seeks the foreign body, salivation is stimulated and jaw movement commences. Just as the mouth is charged with chewing, the throat is signaled for swallowing. When the tip of the tongue is withdrawn to 'play' with the bit, the root of the tongue bunches-up and causes the soft palate – which lies on the root of the tongue –to move upwards. This, in turn, obstructs breathing because it restricts the air passage of the throat (Figs 4 & 5b). If, because of accumulating saliva, a swallowing reflex is initiated, the soft palate will rise even further and, albeit momentarily, block the air passage completely. Breathing is suspended completely when swallowing occurs (Fig 3). So all these activities are physiologically opposed to the sort of responses that are required for galloping.

For fast exercise, the horse should "*set the teeth and stretch the nostrils wide*". The lips should be immobile, the mouth closed and dry, the jaw and tongue at rest, and the soft palate firmly lowered. The horse is an obligate nose breather. It cannot breathe through its mouth as we can and any attempt to do so results in suffocation. The physiological confusion caused by the conflicting demands on the horse's throat for both breathing and swallowing is, in my opinion, responsible for many instances of dorsal displacement of the soft palate in the racehorse and the disastrous episodes of choking-up that follow.

3. A bit promotes rigidity of the neck:

A horse that leans on the bit has lost that freedom of the neck that is a prerequisite of athletic performance. No human athlete could perform well with their neck in a cast. If the neck is rigid, so is the spine and, as a corollary, leg movement also becomes cramped. The stride becomes shorter, choppier and slower. Because the horse is 'heavy on the forehand' more strain is placed on the tendons, ligaments, bones and joints of the forelegs

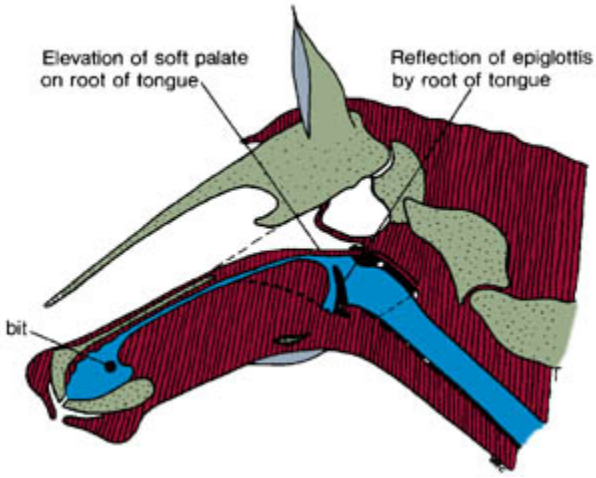


Fig 4. Showing what happens in the throat when a horse plays with the bit. Retraction of the tongue behind the bit causes the root of the tongue to bunch-up and push the soft palate upwards and the epiglottis backwards. The airway of the throat becomes severely restricted and the mouth of the larynx is almost closed. If this happens at fast exercise, the horse makes a roaring sound on inspiration (*laryngeal stridor*) and tremendous turbulence of airflow takes place. The broken line shows where the root of the tongue should lie.

and this, in turn, leads to breakdowns and accidents. Furthermore, the horse wastes precious energy in locking-up the neck and spine. This, in turn, leads to premature fatigue, another factor in the cause of breakdowns.

4. Any interference with breathing, interferes also with striding:

At the canter or gallop, horses breathe with their legs. They take one breathe for every stride. As breathing and striding are inextricably connected, it is also true to say that they take one stride for every breath. Anything that interferes with the rhythm of breathing, such as the bit, must also interfere with the rhythm of striding. In this way, the bit can be responsible for loss of action, stumbling, stiffness of gait and a general loss of that gaiety, lightness, and poetry of motion that is so characteristic of the horse at liberty. Just as in man, the most important part of swimming is breathing, so in the horse, the most important part of running is breathing.

5. Reduction of the natural head bob at exercise:

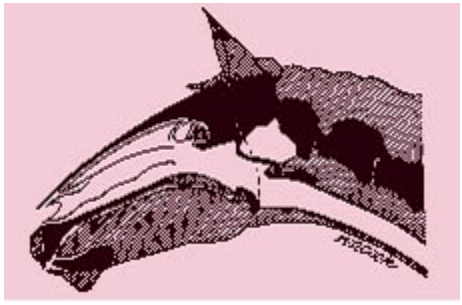
The normal swing of the head-and-neck pendulum in the galloping horse at liberty constitutes an important energy saving device. As the head drops under the influence of gravity and the fore limbs are weight bearing, this raises the pelvis which, in turn, draws the hind limbs forward and overcomes their inertia. Subsequently, as the hind limbs become weight bearing, the head is raised by the elastic recoil of the strong rope-like ligament that runs from the poll to the withers (the *ligamentum nuchae*). Elevation of the head, in turn, results in the fore limbs being drawn forward and so, once more, energy is saved in overcoming their inertia. If the head bob is reduced or prevented because the horse is leaning on the bit, the horse has to use precious muscular energy to achieve the same speed. This is wasteful of resources (oxygen and muscle sugar) and leads to breathlessness and premature fatigue. Fatigue in the racehorse is a potent source of breakdowns.

6. The bit tends to produce excess poll flexion:

The bit controls speed and produces a braking effect by causing or threatening to cause pain. The result is that, unless the horse takes evading action and clamps the bit between its teeth, a horse can rather easily be persuaded to flex its poll. Unfortunately, poll flexion is incompatible

with unobstructed breathing. Once again, the bit produces a conflict. Full speed ahead requires full extension of the poll (Fig 5a). But, with a bit, full speed and full control are incompatible. A bitted racehorse is rated by obstructing the flow of oxygen. A bitted dressage horse, which still needs to be able to breathe, may have its head positioned so that the nasal bone is vertical to the ground or, even worse, in the overbent position. Any horse that is required to carry out demanding physical exercise with its head in these positions is, by definition, working against a severe handicap because its airway is seriously obstructed at the level of the throat (Fig 5c). Poll flexion by itself reduces airflow and increases the work of breathing but, in addition, the soft palate elevation and general flaccidity of the throat that accompanies poll flexion compounds the obstruction. Poll flexion caused by the bit is a cause of 'roaring'

Fig 5. Showing the effect on the airway at exercise of two common faults that are frequently brought about by use of the bit.



A: Normal. The head and neck are in almost full poll extension (jowl angle 140°). The airway is straightened out and stretched longitudinally, rendering it unobstructed.

B: Shows the displacement of soft palate unbuttoned from button hole in down to half its airflow. The horse gurgles, chokes-up and suffocates.

effect on the airway of dorsal the soft palate. In this situation, the button-hole has become the epiglottis. The elastic-sided the soft palate now has shrunk size and seriously obstructed

C: Showing the effect on the airway when a horse is exercised with its head is such a position that its nasal bone is vertical to the ground (jowl angle 70°). The airway is bent, flaccid and obstructed. During deep inspiration there will be a tendency for the airway to collapse even further along the direction indicated by the arrows.

(*laryngeal stridor*). Many a horse that makes a noise at exercise, especially an intermittent noise, can be cured by removing the bit. In the racehorse, obstruction of the upper airway causes lung 'bleeding' (*asphyxia-induced pulmonary edema*).

7. The bit causes many oral and dental related problems:

- The bit aggravates wolf teeth and necessitates their removal. This is relatively easy in the upper jaw but it is the wolf teeth in the lower jaw which probably cause more trouble and

these, because they lie under the gum, are more of a problem to remove and are less likely to be even recognized as a problem
- The cheek piece of a bitted bridle presses the mucosa of the cheek against the naturally sharp edges of the molar teeth, leading to painful buccal ulcers.
- The bit is responsible for lip abrasions, bruised gums, lacerations of the tongue and star fractures of the mandible
- The horse can get the bit between its teeth and leave the rider without any control whatsoever
- Persistent pressure of the bit on the bone of the mandible is, I believe, a cause of neuralgia in the mandibular nerve and this, in turn, is a cause of headshaking
- The presence of a bit is an added trial to a young horse in the process of erupting its permanent dentition
- There are a number of defects and diseases of the mouth that render use of the bit impractical, for example, sarcoids and melanoma of the lips.
- The bit causes tongue movement and, in the racehorse, this has lead to the common practice of applying a tongue-tie, which compounds the problem
- In the hands of a novice rider or any rider that does not have an independent seat, a bit is a dangerous weapon that can do the horse serious harm and precipitate potentially fatal accidents for both horse and rider.

THE BITLESS BRIDLE

As already noted, the Bitless Bridle controls primarily by poll pressure and pressure behind the ear. By virtue of the fact that the reins cross under the chin, the bridle pushes rather than pulls. And horses respond better to being pushed than pulled. But some pressure is also applied across the nose and the total effect is of two head loops that, together, enable the rider to take a benevolent grip on the whole of the head. Instead of applying focal and potentially painful pressure of many pounds per square inch on the sensitive tissues of the mouth, as does a bit, the bridle applies diffuse and painless pressure on skin and the relatively pain-free subcutaneous tissues of the head. The bit is an invasive method, as a body cavity is violated, whereas the bitless bridle is non-invasive.

The Bitless Bridle is indicated for all horses and not just as a remedial tool for those with one or more of the problems listed at the front of this article. In the last two years, as the bridle has become known to horsemen in general, it has been used on a wide range of horses in all activities from racing to dressage, and from endurance riding to children's ponies. Unlike the other bitless bridles, it can also be used for driving.

The feedback has been almost universally good and the great majority of owners express delight with the results. Braking and steering have been satisfactory and the welfare of the horse has been improved. As has been remarked, "*horses prefer a bridle with a bit missing*". For those competitions in which the regulating body currently stipulates the use of a bit, a simple and least offensive snaffle can be hung from the bridle. It can be hung in a variety of ways, all of which reduce pressure on the mouth compared with the traditional usage. Some of the benefits of the bitless state are lost but not all.

As the bit has been in use for six millenniums, it will take owners and trainers a little while to recognize that simply removing one or more pieces of metal from the mouth, helps the horse to breathe and move better and improves its whole attitude to work. But as a new millennium arrives, there are compelling reasons for re-evaluating the bit's time-honored place in equitation. The bit's Bronze Age technology can now be replaced with something kinder, safer and more efficient.

1 Published in 'Horse America', May 1999