# FEEL IT, LOG IT, FIX IT:

## The Prevention of Accidents Under-Saddle[1]

by Robert Cook[2]

*Venienti occurrite morbo*
(Tackle the problem at its first appearance)


### SUMMARY

*The vast majority of equestrian-related accidents are caused by riders falling. The most common reason for falls arises from a horse bolting, bucking, rearing or being partially suffocated. The most common cause of such behavior is the pain and fear of the bit.*

*The saddle and the horseshoe also cause behavioral changes and physical defects. It is probable that many more saddle and shoe problems remain to be discovered, but the logistics of changing from saddle and shoe to painless alternatives are such that these will only be brought to light by the passage of time.*

*In the meantime, it can be said that the removal of the bit and its replacement with a crossunder bitless bridle, a painless and more effective rein-aid, provides a simple and immediate way of reducing the frequency of riding accidents. Strap on skin beats steel on bone. Removal of the shoe offers a probable way of avoiding long-term problems such as laminitis and navicular disease. Many horses suffering from both diseases have been cured by barefoot management.*

*It would appear that if we don't hurt our horses, we are less likely to be hurt by them. Those steps we can take to improve the quality of life of the horse are the same steps that reduce the likelihood of horse-related accidents.*


Photo courtesy Robert Cook

A team competing in the dangerous cross-country phase of eventing – bitless.

### INTRODUCTION

In the summer of 1995, Christopher Reeve's horse refused at the third jump in a cross-country event. Reeve, wearing both helmet and vest, was pitched forward, landed on his head and broke his neck. Much was written about the accident and Reeve's accomplishments after the accident. Before he died, ten years later, Reeve had done a great deal for quadriplegics in general, and for stem cell research in particular. His accident was awful, his disability tragic, and his work for the disabled heroic. But, as far as I am aware, little or nothing was learned about the cause of the accident.

Why did Reeve's horse freeze? What information is available on the cause of this behavior? It was not the first time that a horse had refused a jump. Some riders manage to stay in the saddle and some get tossed. Some of the tossed ones get lucky, and others die. A recent issue of the UK journal, "*Horse and Hound*," carries a news item about a 73 year-old foxhunter who was killed outright in a similar accident.

A number of studies have been published on the cause of riding accidents (Pinchbeck et al, 2004a, 2004b, Murray et al, 2006). These have mostly focused on factors other than the horse, for example, the nature of the track surface in racing and the design of jumps in eventing... what might be called the extrinsic equipment of horse sport. In this article, I will be focusing on the intrinsic equipment or, to put it more simply... tack. This is an aspect of horse-related accidents that has not been adequately investigated. It is my belief that, collectively, the bit, saddle and shoe are major factors in the cause not only of accidents but also of a host of defects and diseases (See Table I).

With the perspective of hindsight, it seems that man has done much to make life difficult for the horse since it was first domesticated. In the early days, around 3000 BC, man placed metal rods in the horse's mouth. Sometime later (c.200 BC), he put a strap around the horse's chest and used this to secure in place a seat. More recently, (c.900 AD), he began to nail iron clamps on the "toenails" of all four feet. At the same time, stallions were stalled and the practice of stabling began.

[1] *Based on a radio program interview for "Animal Talk Naturally," 18th March 2009.*

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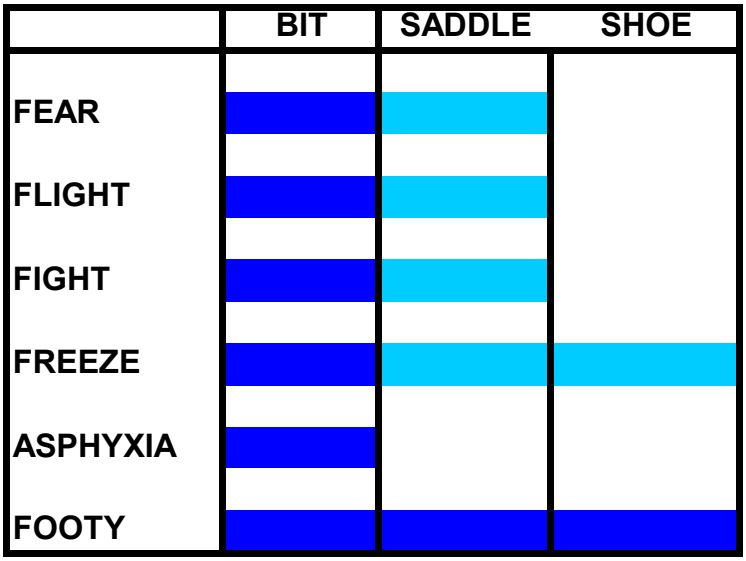


**Table I**: The six 'F's; showing the main groups of tack-induced problems.

Key: deep blue = most frequent factor; pale blue = less frequent factor.

Much of what follows relates to the study of behavior in the ridden and driven horse, as opposed to behavior in the wild, and in the paddock or stable. This is an aspect of ethology (the study of behavior) that has received little attention to date. If the pun can be forgiven, behavior "under saddle" and "in harness" has not really been "tackled."

## COMPARATIVE RISK

These days, the horse is not considered primarily as a means of transport, yet essentially, this is what it still provides. How does riding compare with other forms of travel accidents? In order of increasing risk, the least risky is air travel. Quoting from a recent book by Lewis Wolpert (2006). *"The actual number of deaths per million kilometers traveled is less than one for airlines and trains, around five for car drivers and passengers, fifty for cyclists, seventy for pedestrians and 100 for motorcyclists. These figures could be misleading as, for example, we walk far fewer kilometers than we fly, so what might be perceived as a greater danger in walking is in fact not."* Wolpert does not comment on equestrian accidents. The total "mileage" of most horsemen will be relatively small, yet accidents are common. The accident-rate per mile is probably quite high.[3]

There are no comparable statistics but my hunch is that the risk of riding or driving should be at least equated with riding a motorbike and is probably more dangerous (Ball et al 2007). Most state laws in the USA require participants to accept that riding is an inherently risky sport. The majority of injuries to riders are caused by falls; by being thrown, bucked off, or tipped out. At the time of injury, most horsemen are not actually riding. A jockey is a 37mph projectile, balancing somewhat precariously on a horse that has been urged into a semi-controlled bolt. Outside racing, amateur riders are 20 times more likely to fall than professionals. One in every hundred falls is fatal to the horse. Risk factors listed include rider inexperience, equipment problems and unpredictable horse behavior. Helmets have reduced brain injuries from falls but what can be done to reduce falls in the first instance?

## RISK REDUCTION IN OTHER ACTIVITIES

Pilot error used to be a significant cause of plane accidents. In the 1980s this was dramatically reduced by the introduction of two programs, Cockpit Resource Management (CRM) and flight simulators. CRM made better use of the whole team in the cockpit and overcame the diffidence that some members of the team previously showed in disagreeing with the pilot. Problems were spotted more rapidly, acknowledged and resolved, before they spiraled out of control. The mantra of CRM is "See It, Say It, Fix It." The title of this article and the thrust of my suggestion for risk reduction in riding and driving is an equine version of this CRM mantra.

The training of pilots was enormously enhanced when flight simulators allowed instructors to generate realistic flight hazards in an artificial cockpit that never left the ground. Pilots could now learn from their mistakes and train their brains to make appropriate high-speed responses when warning lights winked on their dashboards. Each flight, when over, could now be reviewed in an exhaustive debriefing.

Horses don't come with dashboard warnings but, as will be explained, they do give warnings. Riders need to recognize these signs, take note and act upon them.[4]

## ADVANCES IN NEUROSCIENCE

Apparently, we make decisions in two ways, not one (Lehrer, 2009). Since the time of Plato and until very recently, we have prided ourselves on the assumption that we are rational animals and make decisions using the uniquely human part of our brain, the prefrontal cortex. This is a myth. The rational brain is a recent development (a mere 200,000 years old) and it is both deliberate and slow. As has been said, it is like a software program that has been rushed to market. Our rational brain is good for making decisions about relatively simple problems, where there are only two or three factors to consider. For anything more complicated (like buying a house, choosing a wife, riding a bicycle or a horse), we use our emotional brain. This is several hundred million years old. It is fast, effortless and more accurate. It does its thinking based on feelings that have been logged into the brain on the basis of past experience. It makes decisions for us, based on knowledge we have accumulated unaware. Emotions guide us instinctively.

[3] *A few endurance riders have clocked-up 7000 miles or more, but such achievements are rare.*

[4] *For convenience, it can be assumed that whatever is written about riding applies also to driving. In terms of accidents per kilometer, driving is probably even more risky than riding, for a number of reasons.*

Our emotional brain knows more than we realize. Our emotional (unconscious) brain documents and learns from our mistakes and trains our thinking processes. It provides us with feedback (i.e. "feelings") to help prevent us from repeating these mistakes. For example, let's say that you have been riding the same horse for several years but (so your emotional brain tells you) you are becoming increasingly disenchanted with the pleasure you derive, i.e., the pleasure centers of your brain are not being triggered. Your brain notes that you seem to be developing more and more problems as a rider, and that riding is becoming increasingly more "difficult" for you. A message is sent from your unconscious brain to alert you to this problem. The message is "apprehension" (i.e., riding is less fun than it used to be (so your brain says). Your brain begins to make excuses for not riding. You wonder (you cerebrate) whether to sell the horse and buy another, or you might "make up your mind" to give up riding altogether. In a nutshell, you are scared. You don't want to admit it to others, and you don't even want to admit it to yourself, but, every time you think of riding, you feel frightened. Your emotional brain has generated a warning signal... "butterflies," sweaty palms and an overactive bladder.

By this time, it is already rather late to ask yourself WHY you feel like this, though all is not lost and the question should be asked. A better strategy is to start asking yourself such questions much earlier on – at the time when each problem first appeared. The problem was noted by your brain (the WHAT) but you didn't ask WHY and, therefore, didn't resolve the question, "HOW do I deal with this problem?"

It's rather similar to the situation when a warning light on the dashboard of your car alerts you to the fact that one of the car doors is not properly shut. If you ignore the early **warning**, the WHAT, the door may fly open and a passenger fall out. Things go from bad to worse. Most car drivers, of course, take notice of the dashboard warning and correct the problem when it first occurs. As riders, we too should pay attention to our 'in-house' warning system. When our brain documents a problem, we should do something about it. Otherwise, the problem escalates from trivial, to serious, and even fatal. Fortunately, in most cases, the first sign of a problem is not sudden death.

## RELEVANCE OF A CASE HISTORY

When researchers collect evidence about the cause of riding accidents, they focus, understandably, on the particular circumstances on the day of the accident. This is generally the only evidence they can gather in retrospective studies. More prospective studies are needed of the sort carried out by Pinchbeck et al (2004a) in which evidence is collected **before** the accident.

Case-histories would enable us to back-track from the day of the accident and learn what signs the horse was showing for several months prior to the accident. Such evidence would be valuable. For example:

- Had the horse ever refused a fence **before** the day its rider broke his neck (and if so, WHY)?
- Was the horse in the habit of rushing his fences **before** the day he somersaulted over one and killed his rider (and if so, WHY)?
- Had the horse been difficult to slow or stop **before** the day he bolted and ran into a brick wall (and if so, WHY)?
- Had the horse shown any reluctance to work or leave the barn **before** the day he bucked and his rider broke her back (and if so, WHY)?
- Had the horse been inclined to throw his head in the air when ridden **before** the day he reared, fell over backwards and crushed his rider (and if so,WHY)?[5]
- Had the horse been showing warning signs of any sort **before** the day of the accident?[6]

## LEARNING FROM EXPERIENCE

When we travel by public transport, we assume that all the necessary precautions have been taken and that the transport company has learned from its mistakes in the past.

But as riders can we be confident that are learning from past experience? How many of us are really conscientious about preflight checks of equipment? Has anyone ever instituted the habit of debriefing? Our emotional brain has been taking note and the evidence is available if we want to make use of it. Horse riding doesn't lend itself to learning with a simulator but, unconsciously, a rider's brain is still being trained on the job. A rider should, I suggest, make a conscious effort to note those "unconscious" moments of uncertainty, doubt, irritation, frustration, anger or downright fear that occur during a ride. Then, after the ride, research their possible cause against a checklist (see Table II, end of article). In this way, a rider could begin to discover how to correct the problem before it gets worse.

## BEHAVIORAL PROFILING

Taking the bit as an example of tack-induced problems, evidence for its negative influence has, in the last ten years, been documented many times by means of behavioral profiling. Using a questionnaire[7] based on behavior before and after switching from a bitted bridle to a crossunder bitless bridle[8], it has been possible to identify many items of bit-induced negative behavior. It is common for a bitted horse to exhibit 25 or 30 items of negative behavior and for all of these to be resolved a month later, after switching to a crossunder bitless bridle. A few horses exhibit 50 or more problems.

Hundreds of riders have completed these behavioral profile ques-

[5] *As it happens, all of the listed incidents – and many more - are frequently caused by the bit.*

[6] *In his book, "Still Me," Reeve comments that his horse had never previously refused on a cross-country course. He does imply, however, that his horse had been showing some other warning signs prior to the fateful day. The actual signs are not described but apparently they were attributed, rightly or wrongly, to the horse being tender in its back. As a result, Reeve was doing his best to stay off his horse's back, a position he recognized as being more precarious.*

[7] *Available online at www.bitlessbridle.com/FOTB-Q.pdf*

[8] *The BitlessBridle. BitlessBridle Inc. 2000 Nursery Road, Wrightsville, PA 17368 USA.*

tionnaires and thousands more have written about the improvements they have observed in the behavior of their horse as a result of removing the bit[9]. All such evidence can be dismissed as anecdotal but, happily, in October 2008, it was possible to conduct an experiment that met the more rigorous requirements for scientific evidence. A brief description of the experiment will serve to support the suggestion I am making for preventing accidents.

## JOINTED SNAFFLE BRIDLE versus CROSSUNDER BITLESS BRIDLE

At the annual conference of the Certified Horsemanship Association (CHA) held at the Kentucky Horse Park in October 2008, I gave a demonstration that took the form of a scientific experiment in front of witnesses (Cook and Mills, 2009). Four volunteers, all of whom were CHA riding instructors, rode four riding-school horses in two standardized exercise tests. The four-minute, exercise test was first completed using a bitted bridle (a jointed snaffle). Immediately afterwards, the same rider/horse partnership repeated the test using a crossunder bitless bridle. Prior to the demonstration, none of the horses had ever been ridden in a crossunder bitless bridle. The horses' behavior and performance were evaluated and a videotape recording supplemented the "laboratory notebook."[10]

An independent judge with 25 year's experience scored the tests on a scale from zero to ten, for each of the 27 phases of the test. The average score when bitted was 37 and, when bitless, 64 … a change in grade from "fairly bad" to "satisfactory." Individual scores improved, from bitted to bitless, in a range from 46% to 100%, with an average improvement of 75%. Two of the riders doubled their score when bitless. Statistical analysis of the data strongly supported the conclusion that the improvement in performance was not the result of chance. For those that witnessed the experiment, it was a revelation that such a significant improvement in performance could be achieved, **in the very first four minutes**, by removing the bit and replacing it with a painless method of communication. Undoubtedly, each horse would have shown further improvement if the experiment had been judged over a longer time frame. The experiment also demonstrated that the transition from bitted to bitless bridle was trouble-free.

## 'FEEL IT, LOG IT, FIX IT' … HOW DOES IT WORK?

### FEEL IT

Here are a few examples of the feelings that your emotional brain might store away.

- You go into the paddock with a halter in your hand and you feel **sad** and a little **irritated** when your horse trots away from you.
- In the stable, you feel **frustrated** when you try to bridle your horse and he puts his head in the air.
- **Experience** tells you that your horse evades the bit and gapes its mouth, so you **think** you need a dropped noseband.
- When mounting, your horse **makes life difficult for you** by fidgeting and moving away prematurely.
- You **notice** that your horse, so calm when in-hand, becomes nervous and tense when you are in the saddle.
- You **wish** your horse stepped out more freely at the walk and didn't need so much urging.
- At transitions from trot to canter, you **learn to expect** your horse will put in a little buck.
- After he is warmed up for dressage, your horse begins to toss his head. You **realize** that you have lost contact and you get frightened that he might hit you in the face.
- You can't **understand** why, during endurance rides, your horse refuses to drink when given the chance.
- You are a pleasure rider and you **decide** to ride your horse in a covered school only, because you **don't feel safe** on the trail
- You **recognize** that your horse hates the bit.
- You become **nervous** because your horse has started to stumble.

The dozen incidents listed above all install negative feelings in rider's emotional brains. But the list could go on and on, for there are hundreds more (Table II). As it happens, the presence of a bit is a common explanation for all of the above and the only explanation for at least three. In the last ten years, I have documented over 200 problems caused by the bit, and I fully expect to learn more (see the last column in Table III). Collectively, these 200 problems are signs of pain and fear, expressed by conflict behavior. In addition, there are 40 or more physical signs of diseases caused by the bit. Apart from lip sores, scars and sarcoids, the physical signs are, like the bit itself, mostly out of sight. Unless a rider is able to examine a horse's mouth, physical signs such as bone spurs on the bars of the mouth, erosion of the first cheek tooth in the lower jaw and scars on the tongue will not be detected. But bit damage is not limited to the mouth. The lungs can be damaged because of airway obstruction at the level of the throat and constant pain can alter a horse's whole character.

| ITEM of TACK | CONFIRMED PROBLEMS | | TOTAL PROBLEMS | Specific Behavioral Signs | Problems Suspected (B & P) |
|---|---|---|---|---|---|
| | Behavioral (B) Signs | Physical (P) Defects/diseases | | | |
| BIT | 200 | 40 | 240 | 95 | 30 |
| SADDLE | 95 | [5] | [100] | [8] | 100 |
| SHOE | [20] | [6] | [26] | [5] | 11 |

**Table III**: An approximate numerical comparison of the behavioral and physical signs attributed to each item of tack in Table II (at end of article).

Key: A figure in square brackets indicates that the number is underestimated because of the logistical need to group large numbers of signs under one umbrella heading.

[9] *See User Feedback at www.bitlessbridle.com/cat/User+Comments.html*

[10] *Available at www.bitlessbridle.com*

Significant numbers of problems can also be attributed to the saddle and the shoe (Tables II and III). The total numbers may not be as great because, as in man, there is something especially disturbing about the torment of head pain.[11] However, the total number of problems that are attributed to shoe-related problems in Tables II and III are underestimated as the result of a large group of behavioral signs being clumped under "lameness" and a large group of diseases being clumped under "musculoskeletal defects and deformities."

Lameness in the horse is its own advocate and cannot be overlooked. Unfortunately, the signs of pain in the horse's head or back are less well known and are commonly overlooked or, more accurately, fail to be attributed to pain. The signs are familiar enough but, paradoxically, their very familiarity explains the lack of proper attribution. Bits and saddles are so much a part of every day experience that the negative signs they cause are accepted as "normal." "*Oh, yes. My horse always does that – it's a habit of his.*" The ability to switch a horse quickly and easily from bit to bitless has exposed these signs as both abnormal and avoidable.

## LOG IT

Instead of blaming their horses, riders should blame themselves. The most likely explanation for all negative impacts is "pilot error" … the rider has made a mistake. Remember the horseman's advice, "Riders do not have problem horses, horses have problem riders." We should avoid the temptation to explain any incident by blaming the horse. We humans are the masters of ad hoc explanations … our rational brains are quick to generate dismissive excuses. For example, "Oh, he's just being an Arab," or "These off-the-track-Thoroughbreds are so highly strung," or "My poor horse is allergic to pollen," and "He was born with an argumentative character." Diagnosis requires a three-stage procedure.

### Stage 1. Paper Trail:

My suggestion is that riders keep a log. Each page of the log could have three columns … "date," "problem" and "notes." I encourage riders to develop the habit of documenting any event that triggered some negative emotion or feeling.

### Stage 2. Compare log with checklist Table II:

Research the possible causes of these problems by cross-checking them against Table II. A considerable encouragement in finding a solution to a problem is the awareness that a solution exists. Many riders, including myself, until I carried out this research, are not aware that the bit can be the cause of so many problems. We have thought of "aversion to the bit" as being a syndrome with about six or, at the most, 12 symptoms. The knowledge that there are 200 symptoms or more comes as something of a shock.

There is a difference between cause and correlation. A fall in the barometer correlates with bad weather, but it does not cause bad weather. A skeptical reader might be inclined to argue that as a bit is present in most horses, how can one be sure that the bit is the real cause of all these problems and not simply an accessory circumstance that just happens to correlate with the negative behavior? A wit might point out that, as all the horses showing these signs also have a tail, one might with equal justification claim that the signs are caused by the tail. Such an argument is refuted in the "Fix it" stage.

### Stage 3. Differential diagnosis:

Some signs are specific to one item of tack (see Table III) but many signs are common to two and some are common to all three. Some horses will be exhibiting signs attributable to more than one item of tack. Fortunately, as each horse's log will demonstrate, diagnosis does not rest on one sign only but a collection of signs... typically an extensive collection. A pattern will emerge from the multiple problems you have logged and a tentative diagnosis will be possible.

As the old medical adage rightly instructs, "Common things commonly occur." Because the bit is an extremely common cause of negative behavior, there is a high probability that many of the items on a riders log will tally with the column in the checklist marked "bit" rather than "saddle" or "shoe."

## FIX IT

If the problem points to a tentative diagnosis of "bit," the diagnosis can be tested easily and quickly by switching from bit to bitless and noting an immediate improvement in behavior.

Something similar can be demonstrated with a change of saddle or a switch from a treed saddle to a treeless saddle. However, because of the more chronic nature of backache, the improvement in behavior might not be so immediate or as convincing as it is with bit to bitless.

The negative influence of the shoe, real though it is, cannot be demonstrated so dramatically by behavioral improvement because of the time it takes for the hoof to recover from being shod. In this case, the evidence comes from a gradual return of normal anatomy and physiology, i.e., from the absence of lameness and recovery from disease. But the warning signs come from one or more departures from the normal anatomy of the horse's hoof, i.e., the physical signs. So to detect and document the warning, riders need to become more familiar with what a healthy hoof looks like. The shape is not that described in many textbooks.

As a "bit" diagnosis will be so common, and as it happens to be the easiest and least costly to test, a switch from bit to bitless will often be the first thing to do. It can even be used as a way of fine-tuning the diagnosis. Eliminate the bit first, and see what effect this has on the subsequent log.

If the log list points to "saddle," perhaps you can borrow a treeless saddle to test your diagnosis before getting your old saddle re-padded or buying another saddle.

If the log list points to "shoe," I recommend that you research the barefoot management programs and take advice from your nearest certified hoof trimmer.

[11] *"For there was never yet philosopher that could endure the toothache patiently" – William Shakespeare*

## NOT ALL PROBLEMS ARE CAUSED BY TACK

Behavioral problems under saddle can, of course, be caused by physical defects and diseases unassociated with any item of tack. For example, equine protozoal myeloencephalitis (EPM) in the horse can present with signs of stiffness and incoordination that are also consistent with a bit-related problem. But as there is no test for EPM that conclusively proves that the signs are caused by EPM and as confirmation of diagnosis by response to therapy for EPM is lengthy and expensive, it might be best to first eliminate the bit as the cause.

Genetic factors also cause disease. For example, partial or complete paralysis of the voice-box (larynx) can be responsible for an abnormal respiratory noise at exercise in the horse. But this noise can be similar to elevation of the soft palate which, in my experience, is most commonly caused by the bit, so differentiation becomes necessary. Some of the additional signs on the log may enable you to recognize that the bit is responsible before you submit your horse for soft palate surgery.

Genetic factors undoubtedly influence behavior in the horse. However, many riders have been convinced that certain undesirable character traits in their horse were inborn and therefore unchangeable, only to be pleasantly surprised and delighted that elimination of the pain of the bit brought about a complete reversal and elimination of these traits and the resurfacing of a thoroughly delightful animal. Similar reformations of cranky horses have been reported when the pain of a saddle was eliminated.

## COMPETITION RULES MANDATING BITS AND SHOES

The great majority of riders and drivers ride for pleasure and do not wish to compete, so there is nothing to stop them from using a more humane, effective and painless rein-aid or from adopting a barefoot management program.

But most national federations and pony clubs adopt FEI guidelines that currently require competitors to use bits and shoes. With regard to the bit, the results of the bitless experiment and field experience over the last ten years provide ample evidence of the need for rule change proposals to be submitted in order that the crossunder bitless bridle, a safer and more humane method of communication than the bit, is made available as an option for competition. The crossunder bitless bridle has been thoroughly tested on horses of all types, temperaments and stages of schooling; by riders of all ages and ability; in nearly every discipline; and under diverse conditions, worldwide. The scientific, humanitarian and practical equestrian reasons for providing such an option are compelling. The option should not be denied on the grounds of tradition. The bit is a Bronze Age invention. Horsemen now have a better way to communicate with their horse's head.

Members of pony clubs, national equine federations, the international equine federation (FEI), and administrators of racing are urged to submit the necessary rule change proposals in order that the rules, for all disciplines, embrace this historic advance in welfare and safety for horse and rider. The Royal Dutch Equestrian Federation (KNHS) led the way, in 2008, by agreeing to consider approving the crossunder bitless bridle for dressage and for driving competitions, by initiating a probationary three-year trial of bitless dressage (in 2016, bitless is now approved for "Beginner," "Light," and "Middle" level dressage). The South African National Equine Federation (SANEF) launched a year's trial for separate bitless dressage competitions, starting in 2009, and now allows bitless bridles in Training, Newcomer and SASA Riding horse classes. The 4H of New Brunswick, Canada, approved bitless bridles in 2015 for all their competitions. Much suffering, many accidents and a host of diseases could be avoided if other federations would follow their example and introduce this simple administrative reform.

*A stroke of the pen could stop the pain.*
*There is nothing to lose and much to gain*

**ACKNOWLEDGMENTS**

In compiling Table II, line items have been incorporated from a glossary of dressage terms published by J. Ashton Moore, Chairman of the USDF Educational Subcommittee and member of the USDF Judges Committee.

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## Table II: A diagnostic checklist of behavioral and physical signs caused by tack.

*The article to which this table belongs, "Prevention of Riding Accidents Caused by Tack: Feel it, Log it, Fix it." is available online at www.bitlessbridle.com. Click on 'Articles' for 2009 and scroll down*

Many of the signs are known to cause accidents and several others may cause accidents. Behavioral signs for the bit and saddle are comprehensively listed at the present state of knowledge (undoubtedly, additional items will be confirmed by further research). Behavioral signs for the shoe are numerically underestimated, as they have been grouped under the the umbrella line item of 'lameness,' there being too many signs to list separately. Physical signs (defects and diseases) caused by the bit are, again, thought to be fairly complete on the basis of current research. Diseases caused by the saddle and shoe have been partially summarized.

*KEY*
*yellow = physical defects and diseases;*
*blue = behavioral problems that may be tack-induced but for which, at present, there is no evidence;*
*x = suspected as a cause but evidence yet to be collected*
*x = has been documented as responsible for the problem and the problem has been solved by removing or changing the tack*
*xx = the more common cause when more than one item of tack can cause the same problem;.*
*xxxxxx = a summary for a group of problems*

### SIGNS OF TACK-INDUCED PROBLEMS: A diagnostic checklist

| SIGNS OF PROBLEMS PRIOR TO RIDING | BIT | SADDLE | SHOE |
|---|---|---|---|
| **Difficult to catch in field or paddock:** Agitation at even the sight of a person, a bitted bridle or a saddle | xx | x | |
| **Difficult to bridle:** Holds head high; clenches teeth, pulls away. May or may not be difficult to unbridle | x | | |
| **Difficult to saddle:** Cold-backed, resents girth being cinched-up, kicks at the girth, attempts to bite handler | | x | |
| **Difficult to shoe:** For example, unable to stand on three legs | | x | x |
| **Difficult to load in a trailer:** Possibly a general sign of reluctance to work, poor attitude to exercise | x | x | |
| **Rearranging the stall bedding constantly:** | | x | x |
| **Unfriendly in stable:** Pins ears, threatens to bite, swings quarters towards handler | xx | x | x |
| **Head shy:** Difficult to handle around the head, to open mouth or touch ears, to clip or hose | x | | |
| **Lip sores:** Chafes, cuts, and loss of pigment, especially at the corner of the mouth (see also 'Sarcoids') | x | | |
| **Pressure sores under a badly fitted saddle:** The result of a restricted blood supply | | x | |
| **Quidding (dropping food from the mouth):** Sequel to a sore mouth | x | | |
| **Weight-shifting between limbs:** Reluctance to stand comfortably on all four limbs | | | x |
| **Paddling:** Frequent shifting of weight between feet in the standing horse | | | x |
| **Limb guarding:** Attempting to stabilise limb to modify pain | | | x |
| **Abnormal weight distribution:** Various postural alterations, e.g., classic stance associated with laminitis | | | x |
| **Pointing a forelimb:** | | | x |
| **Hanging a limb:** Completely non-weight-bearing | | | x |
| **Deformity of one or more hooves:** | | | x |
| **Rolling excessively in the field:** | | x | |
| **Rope-walking or plaiting:** | | x | x |
| **Saddle sores, galls under saddle or girth, creased skin, white hairs, scars, hard spots in saddle area:** | | x | |
| **Sarcoids and cutaneous habronemiasis around the lips:** Predisposed to by bit-induced skin abrasion | x | | |
| **Scabbard trachea:** Deformity & narrowing of the windpipe caused by obstruction of throat/voicebox at exercise | x | | |
| **SIGNS OF PROBLEMS DURING OR AFTER RIDING (listed alphabetically)** | BIT | SADDLE | SHOE |
| **Above the bit:** Head high, nose poked | xx | x | |
| **Abnormal posture at rest:** Laminitis causes major abnormalities but more subtle changes also occur | | | x |
| **Acceptance of the bit - lack of:** Resistance, evasion | x | | |
| **Activity - lack of:** No enthusiasm for work, dull, listless | xx | x | |
| **"Advanced rider" - lack of:** Problems and **r**isk escalate in **a**bsence of "an independent seat & soft hands" | x | | |
| **Against the bit:** Leaning on the bit, heavy on the forehand | x | | |
| **Alignment - lack of:** Failure of the body parts to line-up from poll to tail | x | x | |
| **Allodynia:** Pain response elicited by what is normally a non-noxious stimulus, e.g., touching ears or forelock | x | | |
| **Amputation of the tongue, partial amputation or deep wound:** See also 'Fracture of lower jaw' | x | | |
| **Anxiety:** Nervous, spooky, 'hot,' highly-strung, frisky, apprehensive, suspicious (see also 'wind-up') | xx | x | |
| **Asphyxia-induced pulmonary edema (AIPE):** See EIPH, DDSP, negative pressure pulmonary edema | x | | |
| **Attitude':** Calm in the stable but fretful & poor attitude to work, incorrectly assumed to be an inherited fault | x | x | |
| **Backing-up:** Running back, 'sucking-back', going into reverse in response to a forward cue | xx | x | |
| **Bad-tempered:** Sour, irritable, unfriendly, angry, resentful, cranky, argumentative | xx | x | |
| **Balance - loss of:** Sudden increase of weight onto the forehand &/or to one side | x | x | x |
| **Balky:** See 'napping' | xx | x | |
| **Behind the bit:** Shrinking back from bit contact, may or may not be behind the vertical | x | | |
| **Behind the leg:** Unwilling to move forward and at same time accept contact, slow to react to leg aid | x | x | |
| **Behind the vertical:** The horse may or not be 'behind the bit' | x | | |
| **Bend - faultiness of**: For example, bending only in the neck, base of neck or counterbent in body | x | x | |

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| **Biting:** Attempts to bite at the shank of the hackamore, curb bit, reins, rider's boots or a horse alongside | x | | |
| **"Bleeding":** See EIPH. Cause analogous to negative pressure pulmonary edema in man | xx | | x |
| **Bleeding from the mouth:** Generally seen immediately after exercise | x | | |
| **Blepharospasm (a noisy spasm of the eyelids):** Rare symptom of trigeminal neuralgia | x | | |
| **Blinking excessively in bright light:** Part of the trigeminal neuralgia syndrome (headshaking') | x | | |
| **Blocked:** Impaired connection due to sustained muscular contraction, creating rigidity | x | x | |
| **Bolting:** Can occur during saddling but more commonly during course of work, at transitions and after spooking | x | x | |
| **Bone spurs on the bars of the mouth:** A common sequel to use of the bit | x | | |
| **Bossy:** See 'resistant' etc | x | x | |
| **Breakdowns on the racetrack:** Strained tendons, ligaments, long bone fractures, shattered pasterns etc., | x | | x |
| **Broken neckline:** Excessive longitudinal flexion one third of the way down the neck e.g. Rollkur | x | | |
| **Broke gait:** Failure to maintain canter; reverted to trot (see also 'Freezing" | x | x | |
| **Bucked shins:** A combination of immaturity, heaviness on the forehand and gound concussion | x | | x |
| **Bucking:** Can occur at any time but especially at transition from trot to canter or when first mounted | xx | x | |
| **Burping or belching during exercise:** A sequel to open mouth and wind-sucking or yawning at exercise | x | | |
| **Cadence - lack of:** Unsteady tempo, loss of rhythm and 'beat' | x | x | |
| **Camped-out legs:** Abnormal posture in the standing horse, as in lamnitis | | | x |
| **Carriage - lack of:** Loss of self carriage (judged by viewing the horse's profile or outline) | x | x | |
| **Catastrophic injuries** (severe musculoskeletal injury, condylar, sesamoid, slab, pastern fractures etc.,) | x | | x |
| **Chewing the bit:** *"Gently and softly mouthing the bit," a "wet" mouth, with relaxation of jaw"* FEI ??! | x | | |
| **Choking-down:** Usually in a racehorse, especially a Standardbred. Sudden asphyxia, 'gurgling' | x | | |
| **Choppy gait:** Stiff, proppy and tense. Short steps | xx | x | x |
| **Clarity - loss of:** Absence of a clear beat to the gait | x | x | |
| **Clarity -loss of:** Poor or absent transition between paces e.g. between working and lengthened canter | x | x | |
| **Clean flying change - loss of:** The presence of trot steps or disunited steps when lead changed | x | x | |
| **Closed halt - lack of:** Unbalanced posture at halt - not 'four square' - hindlegs not under body | x | x | |
| **"Cold-backed" during mounting:** | | x | |
| **Collection - lack of:** No 'engagement' and no lifting of forehand when gait shortened | xx | x | |
| **Confidence - lack of:** Absence of trust, boldness and self-assurance | x | x | |
| **Connection - lack of:** Absence of a unity between horse and rider. A prerequisite for 'Throughness' | x | x | |
| **Constrained:** Forced or compelled against the horse's will lack of compliance and harmony | x | x | |
| **Constricted:** Held together, forcefully shortened or physically tight, limited by constraint | x | | |
| **Contact - loss of:** Reins looped, lack of connection or 'elasticity' between horse and rider | x | x | |

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| **Correctness - lack of:** Absence of straightness of limb action, e.g. winging, paddling, twisting of hocks | x | x | x |
| **Coughing at start of exercise or in association with head tossing:** Part of Headshaking syndrome | x | | |
| **Counterbent:** See 'bend' | x | x | |
| **Counter cantering:** On the wrong lead. Refusal or reluctance to change leads | x | x | |
| **Cringing on palpation of the back:** A horse that drops its back on palpation of the saddle area | | x | |
| **Crookedness**: Lack of parallelism to line of travel (e.g haunches not in line with long axis of travel) | x | x | |
| **Crookedness:** Misalignmernt of body parts from tail to poll (e.g. popped shoulder or twisted neck) | x | x | |
| **Crookedness**: Lack of straightness when going forward (e.g. weaving) or at halt or rein back | x | x | |
| **Cross-canter:** Cantering on one lead in front and the other lead behind. Same as 'disunited' | x | x | |
| **Crossing the jaw:** | x | | |
| **Cyanosis of the apex of the tongue:** The tourniquet effect of a double bridle or tongue-tie | x | | |
| **Dangerous - behavior regarded as: For example,** bolting, rearing, bucking, fatigue, poor jumping, spooky | xx | x | |
| **Death:** Sudden death or need for euthanasia following a fall, breakdown, broken back, broken neck etc., | x | x | x |
| **Death-grip on the reins:** Rider fear begets excess rein tension begets horse pain, bolting, bucking and rearing | x | | |
| **Definition - lack of:** Poor distinction at transitions within or between gaits. See also 'Clarity' | x | x | |
| **Dental erosion:** Premature wear and sometimes complete shedding of the lower first cheek tooth | x | | |
| **Diagonal Pairs - lack of:** Failure during rein back for legs to move in symmetric, diagonal synchrony | x | x | |
| **Difficult to mount:** Fidgety, moves off before rider is in the saddle, may buck | xx | x | |
| **Disobedience:** Determination to avoid doing what is asked, or to do what is not asked. Willfulness | x | x | |
| **Disassociation:** Hooves of a diagonal pair of limbs (in trot or canter) do not contact the ground together | x | x | |
| **Disengaged haunches:** Lack of collection during transition from trot to walk. On the forehand | x | x | |
| **Distinction lack of:** Used in reference to transitions (see also 'definition') | x | x | |
| **Distress:** An extreme form of stress (e.g., pain) that negatively affects an animal's physiology and behavior | x | x | x |
| **Disunited (canter):** Same as 'cross-canter' | x | x | |
| **Dorsal displacement of soft palate:** Airway obstruction at the level of the throat, 'choking-down, etc., | x | | |
| **"Double handful" sudden loss of:** Jockeys description of the moment in a race when a horse stops trying | x | | |
| **Dragging:** Scuffing of the toes of the hind hooves or inactivity of the hind legs) | x | x | |
| **Dragging**: Dragging of the feet in reinback | x | x | |
| **Drifting:** Taking unnecessary steps after halt cue (see also 'Running' | x | x | |
| **Dropping inside shoulder on the turn:** Leaning on the turn, cutting the corners | x | x | |
| **Ducking out of turns:** Turning wide | x | x | |
| **Dull and dispirited:** Often a sign of chronic pain and learned hopelessness | x | x | |
| **Dynamic collapse of the throat (nasopharyngeal airway):** Sequel to 'elevation' of the soft palate' | x | | |

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| **Dynamic collapse of the voice box:** Sequel to 'elevation' & DDSP, 'tracheal collapse' & 'scabbard trachea' | x | | |
| **Ear movement - rapid & erratic:** A sign of fear and anxiety | x | x | |
| **Ear pinning, habitual:** In the stable or at work, a sign of irritability, aggression or pain | x | x | |
| **Edema (swelling) of the apex of the tongue:** Venous congestion from bit pressure or tongue-tie (see 'lolling') | x | | |
| **Elasticity - lack of:** Inability to stretch and contract musculature smoothly, loss of 'springiness': | x | x | |
| **Elevation loss of:** Failure to raise the forehand | x | x | |
| **Elevation loss of:** Failure in piaffe and passage to raise the legs | x | x | |
| **Elevation of the soft palate:** Step #1 in a cascade of airway constrictions caused by 'tongue retraction' *qv* | x | | |
| **Elevation of the upper lip, as in the Flehmen response:** Baring the teeth can be a sign of pain | x | x | |
| **Emotional stress:** Any pain that has a negative impact on a horse's normal physiology or pattern of behavior | x | x | x |
| **Engagement - lack of:** Failure to flex the lumbosacral joint, lower the croup and lighten the forehand. Lack of engagement means lack of 'carrying power': a prerequisite for upward thrust'/impulsion' | x | x | |
| **Epiglottal entrapment:** Generally a sequel to exercising with a broken lip seal (due to bit) | x | | |
| **Evasion:** Avoidance of the difficulty, correctness, or purpose of the movement e.g. tilting head, gaping | x | | |
| **Evasion of the bit: "***Avoiding 'correct' contact with the bit*" - an FEI oxymoron | x | | |
| **Excitement:** Pre-race arousal in the parade ring, lack of calmness, may be associated with increased risk | x | | |
| **Expression - lack of:** Absence of increased impulsion, with no harmony, balance, cadence or "feeling" | x | x | |
| **Exercise-induced acute cardiovascular failure:** Possibly triggered by asphyxia and congestion of the lungs | x | | x |
| **Exercise-induced pulmonary edema (EIPH):** Preferred name AIPE or NPPE (see above) | xx | | x |
| **Exercise intolerance:** Decreased speed on the racatrack or in other timed sports. Unwilling | x | x | x |
| = poor neck oscillation and failure of hind hooves to overlap the front | x | x | |
| **Eye -showing white of:** Anxious expression, a restless or staring eye | x | x | |
| **Falling In, Falling on inside Shoulder:** Lateral deviation of forehand, caused by or causing loss of balance | x | x | |
| **False collection:** A passing semblance of true collection but brought about by bit-induced poll flexion | x | | |
| **Fatigue:** Triggered by shortage of oxygen at speed events or metabolic failure/dehydration in endurance | xx | x | x |
| **Fatigue fractures:** Limb bone fractures and falls may be triggered by bit-induced fatigue, shortage of breath etc. | x | | |
| **Fear:** Pain or the anticipation of pain triggers flight, fight and freeze responses | x | x | x |
| **Flapping of lower lip:** Source of a readily audible noise | x | | |
| **Flexibility - lack of:** Poor range of motion of joints. No suppleness or pliability | x | x | |
| **Flicking of the skin, excessively, over the withers and saddle region:** Twitching of the panniculus muscle | | x | |
| **Flipping over backwards (somersaulting):** Sequel to a rear. See also 'rotational falls' | x | | |
| **Flipping palate:** See DDSP | x | | |
| **Fidgety:** Unnecessary movement of head, body or legs at any time, including halt | x | x | |

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| **Finesse - lack of:** Rider unable to persuade the horse to carry out fine movements | xx | x | |
| **Focus - lack of:** No ability to concentrate on aids - varies from mild to unrideable | xx | x | |
| **Forwardness - lack of:** 'Freezing' 'on strike.' Incorrectly used when applied to impulsion, energy, reach. | xx | x | |
| **Fracture of the lower jaw:** Sequel to a loose horse treading on the rein or a sharp tug from a fallen rider | x | | |
| **Frame - lack of:** Absence of a shortening or lenghening of the outline in collection or extension | x | x | |
| **Freedom - loss of:** Constriction, loss of reach and scope | x | x | |
| **"Freezing":** Sudden stops from the canter or trot (see also 'Broke gait"), refusing to move | x | x | |
| **Frisky:** Friskiness can be a version of fear, so 'frisky may be risky' (see 'excitement' and 'jigging') | xx | x | |
| **Gastric ulcers:** Possible sequel to any form of stress | x | x | x |
| **Going into rider's outside leg during walk/halt:** | x | x | |
| **Goose-stepping:** An exaggerated action of the forelegs at the walk | x | x | |
| **Grabbing the bit:** The horse defends itself from the bit by immobilising it between his first cheek teeth | x | | |
| **Grazing on the fly (snatching at tree leaves in passing):** Part of headshaking syndrome | x | | |
| **Grinding of teeth:** Most commonly a sign of head pain but has been reported during saddling | x | x | |
| **Grunting when being girthed or being ridden, especially when going down hill:** | | x | |
| **Half-Halt - lack of:** Absence of a momentary increase of collection in response to the aids, to re-balance | x | x | |
| **Hair-trigger responses to the rein aids:** Hypersensitivity in the mouth as a result of previous injuries | x | | |
| **Hasty or hurried tempo:** | x | x | |
| **Head carriage high:** Accompanies 'hollow back.' | x | x | |
| **Head rubbing:** See 'head shaking.' Muzzle rubbed on foreleg during or after work, and handler | x | | |
| **Head tilting:** Tipping or cocking the head (lowering one ear) - an evasion of the bit or a sign of saddle pain | x | x | |
| **Head tossing:** Sudden, spasmodic and involuntary, upward and downward movement of the head | x | | |
| **Head shaking syndrome:** See 'Head Tossing' 'head rubbing', 'head shyness' etc | x | | |
| **Herd Bound:** Refuses or shows reluctance to leave the stable &/or its companions | x | x | |
| **Hiccups (synchronous diaphragmatic flutter or 'thumps'):** Sequel to stress and possibly dehydration | x | | |
| **High-blowing:** A trumpeting noise on expiration caused by poll flexion and made with the false nostril | x | | |
| **Hollow Back (passive):** A slackness of the back and belly muscles | x | x | |
| **Hollow Back (active):** Sustained contraction of the back muscles, impeding swing and elasticity | x | x | |
| **Hoof defects:** An infinite variety of physical defects, deformities and degenerations, too many to specify. If one were to list every disease and defect of the horse's hoof as a problem this would be correct and it would be close to correct to suspect that most of these diseases were caused wholly or partly by shoeing. | | | xxxxxx |
| **Hurrying when turned for home:** See also 'runaway' and 'bolting.' Opposite of 'herd bound' | x | x | |
| **Hyperalgesia:** An **e**xcessive repsonse to a painful stimulus, e.g. bit pain triggering headshaking (see 'Wind-up) | x | | |

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| **Hyperflexion (Rollkur):** A cause of mental and physical damage**,** airway obstruction, premature fatigue | x | | |
| **Hypersensitivity to rain or wind at exercise:** Trigger for head tossing | x | | |
| **Hypersensitivity to being brushed around head or back:** See also 'allodynia' & 'pain - pathological' | x | x | |
| **Impulsion - lack of:** No thrust because no energy to release from engagement. | x | x | |
| **Incoordination of the gait:** Signs similar to EPM but distinguishable by a simple test - remove the bit | x | x | |
| **Independent seat - lack of:** Absence of this quality results in riders yanking on the reins & escalating a crisis | x | | |
| **Innappetence for a day or two after racing:** Associated with a sore mouth, bone spurs etc., | x | | |
| **Interference (striking front hoof or foreleg with hind hoof):** Part of gait incoordination | x | x | x |
| **Inverted:** Hollow back, high head carriage. Leads to 'ewe-neck' and inappropriate muscling | xx | x | |
| **Irregular: Impure, unlevel or uneven.** Momentary or pervasive. | x | x | |
| **Jerky:** Uneven transition from walk to trot | x | x | |
| **Jigging, prancing and rushing when required to walk:** A sign of nervousness from fear or pain | xx | x | |
| **Lameness:** An infinite variety of lamenesses in their location, distribution, degree and duration | x | x | xxxxxx |
| **Late:** A delay in execution after administration of an aid. Usually applied to flying changes and transitions | x | x | |
| **Late behind:** In flying changes, when the hind legs change after the forelegs | x | x | |
| **Lateral:** An impurity in walk (e.g. ambling or pacing) or canter, rarely at trot | x | x | |
| **Lazy -apparent:** Loss of interest in work, loss of interest in life, learned hopelessness | x | x | |
| **Lengthening of stride - lack of:** A fault in trot or canter | x | x | |
| **Lengthen the top line - inability to:** | x | x | |
| **Lift - lack of:** Applies to piaffe and passage and refers to the height to which the legs are raised | x | x | |
| **Lightness - lack of:** Can refer to the heaviness of a horse on its feet: | x | x | |
| **Lightness - lack of:** Also used to refer to a heaviness in the reins: | x | x | |
| **Lip slapping:** Noisy flapping of lower lip at work | x | | |
| **Lolling:** Tongue flaccid, elongated and protruding. See also 'Edema (swelling') of the apex of the tongue | x | | |
| **Long and low - absence of:** Reluctance of horse to lower and stretch its neck when given the office | x | x | |
| **Looseness - lack of:** Physical or mental tension | x | x | |
| **Lowering head close to the ground and even rubbing muzzle on the ground at exercise":** Rare | x | | |
| **Lugging:** Failure of a harness horse, especially, to steer straight, 'on a line.' 'Pulling' in or out, 'bearing' | x | | |
| **Lying down when first saddled or during work:** The ultimate refusal. 'on strike' | x | x | |
| **Making a noise:** An abnormal respiratory noise during inspiration ('roaring,' 'whistling,' or 'thick in wind' | x | | |
| **Marching - absence of:** Laxadaisical in manner of walk. Lacking in purposefulness | x | x | |
| **Mobility - lack of:** Poor maneuverability/nimbleness of the shoulders/forehand/forelegs. | x | x | |
| **Mouth ulcers:** Incidence increases with use of a bitted bridle | x | | |

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| **Muscle atrophy in the back or wither region:** Sequel to excess or badly distributed pressure from saddle | | x | |
| **Musculoskeletal defects and deformities:** An infinite variety - too many to specify | x | | xxxxxx |
| **Nappy/Napping:** Stopping dead in tracks during walk/trot or canter. Freezing. Rooted to the ground. In the arena or home paddock, tries to return to the stable at every circuit. | x | x | |
| **Nasal discharge (bilateral and watery) after exercise:** Sequel to 'Weeping.' Part of Headshaking | x | | |
| **Neck and cervical spine injuries:** Probably many unrecognized injuries. | x | | |
| **Negative pressure pulmonary edema:** Medical literature term for "bleeding," EIPH and AIPE in veterinary literature | x | | x |
| **Nodding/Bobbing:** Abnormal up-and-down or backward and forward action of the horse's head and neck | x | | x |
| **Nodding inadequately:** Loss of the head/neck pendulum at walk or canter (an energy-saving device) | x | x | |
| **Obedience - lack of:** Not submissive or supple. Unwilling to perform the task, resistant and evasive | x | x | |
| **Obscure hind limb lameness:** | | x | x |
| **On the aids' - lacking:** Not connected and not 'on the bit' Not obedient, calm or responsive | x | x | |
| **On the Bit' - lacking:** Non-acceptance of contact. Above or behind the bit. No stretched topline | x | x | |
| **On the Forehand:** Poor longitudinal balance, in which the forelegs push the horse forward not upward | x | x | |
| **Out Behind:** Hind legs placed, or act, behind the horse's body | x | x | |
| **Open mouth:** Gaping. Evidence of oral pain; masked by use of tight nosebands (see 'tongue retraction') | x | | |
| **Overbent:** Excessive lateral displacement of the neck, spoiling the lateral curve of whole body | x | x | |
| **Overflexed:** Behind the vertical. Excessive longitudinal flexion in the poll and or upper joints of neck | x | | |
| **Overstep - lack of:** Hind foot fails to be placed in front of the fore foot imprint | x | x | |
| **Over-turned:** Turning more than 180 degrees in a half-pirouette or more than 360 degrees in a full pirouette | x | x | |
| **Pace - lack of:** Absence of variation within a gait (e.g. at walk: collected, medium, extended and free) | x | x | |
| **Pain - acute:** Normally serves a biological function but tack-induced pain does not permit a protective response | x | x | x |
| **Pain - chronic (maladaptive)**: Pain that serves no useful biological function (e.g. protection from further injury) | x | x | x |
| **Pain - inflammatory:** As opposed to neuropathic (see 'trigeminal neuralgia') or visceral (e.g colic) pain | x | x | x |
| **Pain - pathological:** As opposed to physiological pain, to which a normal response protects from further injury | x | x | x |
| **Panic:** A tipping point at which pain, fear and emotional stress combine to precipitate loss of all control | x | x | |
| **Performance - poor:** No athlete in pain will or can perform well | x | x | x |
| **Photophobia:** Hypersensitivity to bright light - trigger for head tossing. (photic headshaking) | x | | |
| **Pig-rooting: C**an be a sign of bit or girth pain | xx | x | |
| **Pivoting:** Turning around a grounded (or "stuck") foot in reference to a pirouette or turn on the haunches | x | x | |
| **Poll flexion and asphyxia:** In the wild, a running horse extends its poll in order to breath; denied in racing | x | | |
| **Pollen allergy' (hypersensitivity):** Onset of head tossing when close to a bank of trees | x | | |
| **Ponying - inability to:** Incapable of being led by a bridle when riding another horse on the racetrack | x | | |

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| **Power - lack of:** Pain has a limiting effect on muscle contractility in man and the horse is no different | xx | x | x |
| **Premature fatigue:** Lack of stamina from shortage of oxygen &/or pain from bit, tight girth A282 | xx | x | x |
| **Puller/pulling:** A so-called 'hard-mouthed' horse with the bit between his teeth or under his tongue | x | | |
| **Pulling uphill with the front end:** Unable to use the back or hind legs properly | | x | |
| **Purity - lack of:** Incorrect order and timing of the footfalls and phases of a gait | x | x | |
| **Pushing Out:** Hind legs operating too far behind the horse. Pushing backwards, not carrying | x | x | |
| **Quality - lack of:** No freedom/amplitude of gait, elasticity, fluency etc. Differs from purity & correctness | x | x | |
| **Rapid tempo:** | x | x | |
| **Reach - lack of:** Insufficient forward extension of the fore limbs, hind limbs, or neck of the horse | x | x | |
| **Reaching forward at the halt:** Snatching, rooting, yanking | x | | |
| **Rearing:** Sudden death if somersault causes fractured skull or need for euthanasia from broken back | xx | x | |
| **Refusing at jumps:** An aspect of fear, memory of pain, inability to extend head and neck because of short rein | xx | x | |
| **Regularity - lack of:** No purity of gait, uneven stride lengths, uneven levelness of leg pairs | x | x | |
| **Rein back - reluctant or refused:** | x | x | |
| **Relative elevation - lack of:** No lowering of the hindquarters and elevation of the forehand. Imbalance | x | x | |
| **Relax/Relaxation - lack of:** Anxious, nervous | x | x | |
| **Relax/Relaxation - lack of:** Physical tension in musculature, often accompanies the above anxiety | x | x | |
| **Release - lack of:** Failure to maintain self-carriage, balance, pace and tempo when contact deliberately released | x | x | |
| **Reluctant to eat and drink:** Sore mouth after racing, dehydration on endurance rides | x | | |
| **Reluctance or refusal to go downhill:** | | x | x |
| **Reluctance to rein-back:** | x | x | |
| **Resistance:** Active, rigid opposition to the aids. Not the same as disobedience or evasion | x | x | |
| **Resistance to having a saddle placed on back:** 'Cold-backed' | | x | |
| **Resistance to being girthed-up:** | | x | |
| **Rocking/Rocking Horse canter:** Excessive swing of the head/neck pendulum. Due to lack of sufficient ground coverage, lack of sufficient engagement, or interference by the rider | x | x | |
| **Rotational falls:** A horse that flips over backwards (somersaults) after hitting a jump. See also 'Fatigue' | x | x | |
| **Roundness - lack of:** Absence of a convexity to the topline and concavity of the underline of the neck | x | x | |
| **Rubbing-off the rider:** Running close to standing objects (poles, tree-trunks etc) to dislodge the rider | x | | |
| **Runaway:** See 'bolting' and 'napping' | x | x | |
| **Running:** Excess speed &/or quickness of tempo relative to the engagement and balance expected of the pace or movement. Used in reference to lengthened, medium or extended trot or canter, or canter departs | x | x | |
| **Running through the bit:** Failure to slow or stop. A horse that has the bit between its teeth | x | | |

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|---|---|---|---|
| **Rushed Tempo:** | x | x | |
| **Rushind downhill:** | | x | |
| **Rushing the jumps: A**nother sign of nervousness and apprehension. Bolting on the approach or after the jump | x | x | |
| **Saintly behavior':** Too quiet | x | | |
| **Salivation at exercise - abnormal and excessive:** Drooling, slobbering, foaming at the mouth | x | | |
| **Scope:** Amplitude (reach and roundness) of movement | x | x | |
| **Schooling stagnation:** Horse is slow to learn or fails to learn. Slow progress with training | x | x | |
| **Self-Carriage - lack of:** Unable to balance withut taking support, i.e. balancing on the rider's hand | x | x | |
| **Shying excessively:** see also 'spookiness" | xx | x | |
| **Slack:** In reference to the reins - lacking contact | x | | |
| **Slack:** In reference to the poor condition of the musculature (e.g. "slack loin") | x | x | |
| **Slipping:** Absence of proper (i.e.barefoot) traction on every surface & under all conditions leads to falls & injuries | | | x |
| **Slowing down - lack of:** Failure to respond to the aids: | xx | x | |
| **Slow out of the staring gate:** | x | x | |
| **Slow to warm up or relax** | x | x | |
| **Snatching:** Attempting to jerk the reins through the rider's hands ("rooting" 'gagging" "yawing" "diving") | xx | x | |
| **Snatching:** In reference to a stringhalt like action of the hind legs | | | x |
| **Sneezing and snorting:** Part of the headshaking syndrome | x | | |
| **Soften at poll - failure to:** Resistance an head extension during during transition from walk to halt | x | | |
| **Sore mouth:** From bruised gums, bone spurs, buccal ulcers, lacerated tongue | x | | |
| **Spookiness:** Part of (bit-induced) nervousness but - as a common source of accidents - deserves a line to itself | xx | x | |
| **Spring in step - lack of:** | xx | x | |
| **Starts ride well but gets more resistant later** | x | x | |
| **Star fracture of the bars of the mouth:** A sinus on the gum caused by a piece of dead bone | x | | |
| **Stiff neck** | x | | |
| **Stiff/stiffness:** Inability (as opposed to unwillingness) to flex the limb joints/musculature. . | x | x | |
| **Stopping - failure to respond or slow response to the aids:** See 'behind the leg' | x | x | |
| **Straightness:** Parallelism to line of travel (haunches neither left or right of centre) or to line of reference. | x | x | |
| **Straightness - lack of:** Failure to follow line of travel (e.g., weaving) | x | x | |
| **Strained tendons, ligaments:** Sequel to premature fatigue, concussion etc | x | | x |
| **Stressed:** Fidgety, fizzy and rushing or lazy and awkward, 'hot,' nervous, spooky | xx | x | |
| **Strung out:** Too elongated, lacking good carriage, longitudinal balance and connection | x | x | |
| **Stuck:** See pivoting | x | x | |

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| **Stumbling:** Often accompanied by sluggishness and loss of interest in work | x | x | x |
| **Submission - lack of:** Absence of compliance, throughness, attention, confidence, harmony, willingness | x | x | |
| **Suffering:** | x | x | x |
| **Suffocation:** See DDSP, hyperflexion etc., | x | | |
| **Suppleness - lack of:** Absence of pliability, flexibility. Stiffness. | x | x | |
| **Swallowing the tongue':** See 'Choking down,' elevation and dorsal displacement of soft palate | x | | |
| **Sweating excessively:** A sign of pain. Hot and restless at exercise, lathering-up | x | x | |
| **Sweating - absence of:** On removal of the saddle, dry areas of skin under the saddle (areas of excess pressure) | | x | |
| **Swinging -** lack of: The alternating displacement of shoulder or haunches during flying changes, piaffe etc | x | x | |
| **Swinging Back - lack of:** the springy motion that occurs in the back musculature to hind leg thrust | x | x | |
| **Swinging head:** Muzzle moved left-and-right (in trot and canter) or in circles; non-acceptance of contact | x | x | |
| **Talent - lack of:** Many a tack-handicapped horse is assumed to have inherent character deficiencies | xx | x | |
| **Tail clamping:** Sign of a rigid spine from pain in mouth or back | x | x | |
| **Tail flashing:** Sign of pain, particularly when asked to canter or rein back | x | x | |
| **Taking-off after a jump:** A horse that has experienced pain or fear during the jump. See 'bolting,' 'rushing' | x | x | |
| **Tense/tension:** Referring to horse's mental &/or physical state. Anxious, nervous, fearful, muscular rigidity | x | x | |
| **Thoracic and lumbar spine defects:** Soft and hard tissue injuries (e.g kissing spines, muscle damage). As with the hoof, it would be appropriate to list every known disease of the back as a problem in riding and to consider the evidence for which of these are caused, either partly or wholly by tack | | xxxxxx | |
| **Throughness/Through - lack of:** Failure of aids to go through the whole horse from front to back etc | x | x | |
| **Toe Flicking:** An exaggerated or artificial action of the forelegs, usually at the trot | x | x | |
| **Tongue retraction:** Withdrawal behind the bit causes obstruction of the airway in the throat (see DDSP etc.,) | x | | |
| **Tongue-over-the-bit:** Defence against the bit. Rider loses control; horse labelled 'hard-mouthed' & a 'puller' | x | | |
| **Tossing:** See 'Head tossing' and 'trigeminal neuralgia' | xx | x | |
| **Tracheal collapse (dynamic):** Caused by any obstruction of the airway between it and the nostril at exercise | x | | |
| **Tracheal collapse (permanent):** Sequel to the above, most commonly caused by elevation of soft palate | x | | |
| **Tracks straight - lack of:** The line of path of a foot or feet (e.g. as horse approaches judge on center line) | x | x | |
| **Trailing haunches:** Lack of parallelism during half-pass and leg yielding | x | x | |
| **Trailing hind legs:** Hind legs too far behind the horse | x | x | |
| **Trigeminal neuralgia (the headshaking syndrome):** Referred (neuropathic) pain in the sensory nerve | x | | |
| **Twisting back over jumps:** | | x | |
| **Twitching of cheek muscle on one or both sides:** Sequel (?) to 'grabbing the bit' | x | | |
| **Tying-up (muscle cramps, rhabdomyolysis, azoturia):** Possible sequel to any form of stress | x | x | |

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|---|---|---|---|
| **Uncooperative: Cranky.** Regards rider as a nag and an adversary rather than a partner | x | x | |
| **Unable to stand still;** | x | x | |
| **Uneven:** Failure of each leg to take the same length of stride as its pair. | x | x | |
| **Unhappiness at work:** Persistent evasions, resistance, rarely pricks ears, bites rider's boots etc., | x | x | |
| **Unlevel:** Failure of symmetry in relation to the height of travel in a pair of legs | x | x | |
| **Uphill - lack of:** On the forehand | x | x | |
| **Unfocussed:** Unable to concentrate on the job in hand, too worried about pain etc | xx | x | |
| **Weeping:** Watery eyes associated with head tossing. Part of the headshaking syndrome | x | | |
| **Wide behind:** Hind feet wider apart than front feet, during piaffe, lengthening of trot or halt | x | x | |
| **Wind-up':** 'Wind' rhymes with rind.Sensitisation of pain receptors to repeated stimulation (see 'pain - chronic') | x | | |
| **Wrinkled nostril and lips:** Multiple stress lines around nostrils and lips during work and at rest | x | | |
| **Yawning:** Especially during bridling and during or immediately after exercise (see Headshaking syndrome) | x | | |

Photo courtesy Georgina Pankhurst