Increase Comfort, Reduce Risk: The Bitless Bridle

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A review of the harmful effects of bits on equine behavior, gaits and balance, together with some thoughts on increasing horse comfort to decrease rider risk.

Introduction

In the horse industry, we – not just the EMSA, but riders and instructors everywhere – are constantly in search of new and/or improved equipment and practices that will help make equestrian sports safer for both horses and riders.

Although we still have a long way to go, we have learned a great deal about the ways in which horses' comfort affects their performance. I would now like to see riders, horse owners, and especially instructors address a related topic: The parallel connection between connection between horse comfort and *rider safety.*

In the last fifty years or so, there has been a steadily-increasing interest in the development of new types and designs of saddles and saddle pads to make horses more comfortable. Riders have accepted the idea that pain limits performance. The industry's response – the development of new equipment - reflects the riders' desire to enhance their horses' performance by increasing their comfort. This is a positive trend, and creates a win-win situation.

During the last fifteen years, there has been an upsurge in studies of equine behavior, gaits, movement, and performance in various disciplines from racing to dressage. With each announcement that "Research has shown –," and with each addition to our understanding of feed and supplements, training protocols, fencing, footing, tack and equipment, riders have responded by taking steps to improve their horses' quality of life and success in performance.

Riders can now take another step forward – one that will allow them to further increase their horses' comfort and performance, whilst simultaneously reducing the riders' own risk. Riding is universally recognized as a high-risk sport; it is impossible for riders to avoid *all* risk. However, many risks are unnecessary and can be avoided or at least reduced. This new step in risk reduction would involve a re-evaluation of the use and effects of bits in riding.

For hundreds of years, riders and trainers have debated the topic of bits and bitting. Some questions recur constantly; for example, "What kind of bit is best – that is, most likely to produce optimal performance – for this sport/horse/rider/competition?" It's a compelling question, as a glance through any equestrian magazine or visit to the "bit wall" at any tack shop will verify. *But is it the most important question?* Recent research indicates that better, more useful questions may be "Why use a bit?," "Can a bit – not a specific bit, but simply the fact of there being a bit in the horse's mouth – limit the horse's performance?" and finally, "Does a bit – any bit – inevitably cause *some* harm, and does that harm create unnecessary risk for the rider?"

Short-term risk: pain

Horses frequently experience mouth pain as a result of a bit being badly chosen, poorly adjusted, or overused. There is no doubt about the ability of a bit to cause pain. Research by Dr. Cook, developer of the Bitless Bridle, indicates that the presence of a bit of any kind commonly

causes pain, unwanted behavior, changes within the gait, difficulty in breathing, lung damage and even, on occasion, sudden death.

Most riders understand that a sudden, sharp pain can temporarily override their horses' conditioning, training, and habits of obedience. But not all riders realize that slow, steady pain of long duration has other, less obvious, negative effects. Many riders are oblivious to these effects, which can put the lives of both horses and their riders at risk. A horse that bolts in 'blind' panic because of bit-induced fear and pain, or falls because of bit-induced asphyxia and fatigue, is a danger to itself and its rider.

Pain, whether short- or long-term, is a strong mental and emotional distraction. The natural reaction of a horse experiencing pain is to run. This reaction exists regardless of the source and location of the pain. Many riders make the assumption that no horse would deliberately "choose," in its attempt to flee, to experience additional mouth pain by pushing harder against the bit. These riders conclude – erroneously – that their horses are not actually experiencing pain.

Rider skills include making good choices

Consideration for the horse should be classified as an essential riding skill. Some specific skills – emergency dismounts, for example – can help promote rider safety should the horse trip, stumble, startle, or bolt. Other important rider safety precautions are less physical and more cerebral. Riders need to practice constant awareness, notice when a horse is in pain, and understand the likely cause(s) of that pain. They need to understand the various ways in which pain affects their horses' actions and reactions, and – last but not least – they need to recognize that their horses' pain creates increased risk for both their horses and themselves. Good riders recognize signs of pain in their horses and act to minimize – or, better yet, avoid – that pain. Both horse and rider benefit from a rider's understanding of pain.

Pain, reactions, and rider risk

If a rider causes pain and damage to a horse, one of the results – sooner or later – is likely to be rider pain and damage. Even when a horse and rider have a reasonably happy partnership, with neither individual intending any harm to the other, pain and damage can occur because of ignorance or inattention on the part of the rider. This is a simple matter of cause and effect, action and reaction, not a complex issue of deliberately-caused harm and subsequent retaliation.

Pain both hurts and distracts a horse. This includes pain that is rider-caused, whether deliberately or inadvertently, consciously or unknowingly. A sudden, brief moment of pain from, say, a bee-sting, may provoke a brief response such as a sudden leap sideways or forward, a rear, a buck, or a bolt. These are dramatic responses to a single painful stimulus.

Less obvious sources of intermittent or constant pain will, over time, lead to the horse attempting to protect itself by developing compensatory behaviors including incorrect posture, gaits, and movement.

In the short term, mouth pain and distraction increase the likelihood of the horse tripping or stumbling. In the long term, they increase the likelihood of the horse developing serious behavioral problems. Mouth pain and distraction reduce the horse's ability to balance itself, as well as its ability to focus on its rider; they also increase the risk *to both horse and rider*.

Comfort and risk reduction

Focusing on horse comfort is not a matter of "indulging" the horse. It's a wise rider's way to promote a horse's performance, soundness, and durability.

Most people in the horse industry are already concerned with equine performance; nowadays, many are also concerned with equine comfort. Based on research over the last 15 years, riders, trainers, instructors, and others may want to consider that promoting increased comfort for horses can both improve performance *and* reduce risk. This trifecta – greater comfort, improved performance, and reduced risk – creates a situation that can be accurately described as *win-win-win.*

We learn as we go

Our understanding of horses and riding is always a work in progress. As it continues to evolve, it benefits us and our horses. An ever-increasing amount of science-based evidence challenges and even contradicts the "conventional wisdom" of some long-held beliefs about riding and horse management.

When "conventional wisdom" is challenged and even contradicted by scientific research, both horses and riders benefit. We need to review "conventional wisdom" on a regular basis. We may find that some of that "wisdom" was indeed wise and is still appropriate. Some "wisdom" may have been – or seemed to be – wise once upon a time when we had less knowledge and fewer alternatives; some "wisdom" may have been only situationally wise (e.g. the practice of allowing horses to drink only twice a day) and some "wisdom" may never have been wise at all (e.g., feeding turpentine or a few cigarettes to horses as "de-worming" treatments, or breaking a glass bottle between a horse's ears to "cure it" of rearing).

In our ongoing quest for ways to improve our horses' performance, we have investigated the effects of different types and designs of tack and equipment. For example, over the last thirty years we have learned much about hooves, shoes, and shoeing. We have learned that many aspects of horse management (e.g., nutrition, maximum turnout, suitable footing and appropriate work, regular attention from a competent farrier) affect hoof quality. We realize that horseshoes are not "required" by all horses in all situations, and that there are other options – permanent or temporary, individual or situational – such as horse boots and "barefoot" trims.

Similarly, we have paid increasing attention to the ways in which the design, balance, positioning, and fastening of saddles – all types, with and without trees – affect horses' backs.

We look to science to help us continue to learn. We accept that learning is a lifetime process, and we realize that many notions have been outmoded, including some that were once regarded as hard-and-fast rules.

With regard to bridles, we encounter two such notions: first, the idea that every bridle should have a bit; second, that it is the bit that controls the horse.

To bit or not to bit

For thousands of years, since long before recorded history, horses have powered farming and travel, mobilized armies, spread civilization, and achieved wondrous feats as man's partners in sport – both with and without bits. Even so, much of the earliest riding, with and without bits, was based primarily on control through pain. Eventually, the "need" for a bit became "conventional wisdom." It is only in recent years that the effect of the bit on the horse has been subjected to scientific study.

Unfortunately for horses, many riders still subscribe to a pair of commonly held beliefs, both of them false and neither backed up by science. These are (a) the "need" for a bit, and (b) the notion that the bit controls the horse. It's true that bridles with bits have a long history; bridles without bits have a history that is at least equally long. It is time for us to consider this fact, and to investigate its implications.

Even in classical dressage where the ideal (and eventual goal) combines feather-light signals from the rider ("the aids") and instant, willing compliance from the horse ("submission"), it has always been the rider's superb control of his or her *own body* that has permitted such lightness and subtlety.

Although many riders use bit-applied force to steer and stop their horses, bits are more appropriately used to give subtle signals. Good riders understand this, but many riders are unaware that such subtle signaling can be achieved *without* a bit.

Consider the traffic light. Traffic lights indicate to drivers that they should stop or prepare to stop, but the lights themselves are only signals. Just as humans learn to interpret and comply with traffic signals, horses learn to interpret and comply with their riders' signals. *These signals do not have to come from a bit*.

A traffic light – unless it falls directly in front of or onto a car – does not force the car to stop. A bit can hurt and frighten a horse, cause acute or chronic pain, and/or inflict permanent physical damage to the horse – but the bit does not and cannot force the horse to stop.

Some riders, due to their dedication, sincerity, talent, and decades of education, practice, and refinement, are capable of using a bit with true gentleness and subtlety. That said, the reality is that such riders are few and far between, and few horses will have the good fortune to meet one. As the evidence continues to mount, it seems more and more likely that the question we should be asking is whether the "benefits" of bits can possibly outweigh the harm to horses and the risk to riders.

Dr. Cook's Bitless Bridle

We are now able to bring some science-based evidence to bear on this issue, thanks to Dr. Robert Cook, developer of the crossunder Bitless Bridle.

There are, of course, other forms of bitless bridles. Riders are generally at least somewhat familiar with hackamores, bosals, and sidepulls, many of which are designed to inflict pain and a few of which can break a horse's jaw. Dr. Cook's Bitless Bridle is based on a 'no harm' concept and enables riders to steer, stop, and request both longitudinal and lateral flexion without inflicting pain or causing damage to their horses.

The reins of a crossunder bridle are connected to two straps that pass through "O' rings on the noseband (enabling a rider to apply pressure across the bridge of the horse's nose), then cross each other under the jaw to make a fixed loop at the poll. The crossunder straps allow independent action of the reins and a very quick release of pressure. As the rider steers by briefly increasing pressure on either rein, the horse receives a small amount of nose pressure, a smaller amount of cheek pressure on the opposite side of the head, and an even smaller amount of pressure at the poll. In other words, a brief squeeze on the left rein nudges the right side of the head. One of the first benefits a rider notices is improved steering. For slowing or stopping, a simultaneous squeeze of both reins provides a whole-head-hug, a benevolent signal that is not resented by the horse.

Of course, there are some riders who will insist, through ignorance, insecurity, or outright brutality, on riding with a short, tight rein and an unyielding hand. Under those conditions, even the Bitless Bridle can cause discomfort through constant pressure on the horse's nose. No bridle can fully compensate for a lack of skills or good will on the rider's part, but the Bitless Bridle will spare the horse the infinitely greater discomfort caused by the constant, hard, and focused pressure of a bit on its highly sensitive lips, tongue and bars, as well as the possibility of being deprived of air.

Readers will find comprehensive information about Dr. Cook's Bitless Bridle on his web site: www.bitlessbridle.com

The bitless bridle as a diagnostic tool

Field-testing a Bitless Bridle is simple: put one on your horse and adjust it according to the instructions. Give your horse and yourself a few minutes to test your horse's reaction to "left," "right" and "stop" signals, then just ride. In my experience, the two most common rider reactions are, first, "Oh look, he likes it!" and, after ten minutes or so, "Oh, I forgot I didn't have a bit!"

I frequently make use of a Bitless Bridle when giving dressage clinics and "Horse and Rider Comfort" clinics. I have found that both Dr. Cook's Bitless Bridle and a **good** treeless saddle (e.g., I use one designed by Heather Moffett) can serve as wonderful diagnostic tools.

Whenever riders find it difficult or impossible to believe that their horses' inversion, stiffness, head-tossing, short strides, lack of engagement and overall "resistance" are actually reactions to pain in the mouth, the back, or both, even a brief period of riding with the Bitless Bridle and/or a good treeless saddle can allow those riders to experience the changes and draw their own conclusions.

Whenever one or both of these tack changes allow horses to relax and move more naturally and comfortably, their riders are generally quick to appreciate the difference and realize that they have just learned something important about the drawbacks of their horses' usual tack.

Which horses could benefit from the bitless bridle?

Some "behavior problems" may be solved on the spot by the use of the Bitless Bridle; other issues, like head tossing, may need time. There is no guarantee of an immediate, total transformation. However, visible improvement in comfort and cooperation tend to be the default result, and the Bitless Bridle can help attentive riders diagnose signs of bit-related pain in their horses.

Horses with badly-damaged mouths may be unable to tolerate a bit, even if they are blessed with riders who are master horsemen. A bitted horse with a severed or torn tongue, for example, might be useless as a riding horse whereas the same horse, minus the bit and the mouth pain, might enjoy a long career as a cheerful and comfortable riding horse wearing a Bitless Bridle.

Young horses in training can benefit, as their natural energy can be gently directed rather than shut down. Such horses too often attempt to work in a false frame, either at the rider's insistence or because the horses themselves are making deliberate efforts to avoid pain. Without the limitations imposed by a bit, these horses can learn more easily and quickly, experience less anxiety, and sustain less damage during the training process.

Horses being retrained, for example, off-the-track Thoroughbreds that have learned to push into bit pressure. A racehorse may grab the bit between its teeth, trap the bit under its tongue, or

position its head in such a way that the bit rests against the prow of the first lower cheek teeth (these are less sensitive than the bars of the mouth). These horses show more comfort and relaxation when ridden in the Bitless Bridle. When mouth pain is no longer part of the re-training process, horses quickly accept a more gentle set of signals.

Many horses have learned to avoid mouth pain by over-arching their necks, limiting their stride length, and staying behind the bit (in extreme cases, with their chins on their chests or between their forelegs). These horses can learn that it is safe to move and hold themselves normally. Over time, they will typically develop appropriate musculature and demonstrate a steady increase in stride length. More relaxed, natural, *correct* movement will also improve their balance. By lessening the chances that these horses will trip, stumble, or even fall, this tack change will reduce the risk to the rider.

Horses being rehabilitated following illness, injury, or surgery are often overly "frisky" when they are put back into limited exercise. After a period of stall rest, when a naturally energetic animal is finally out of its stall and allowed to enjoy some (limited) forward movement, riders often feel a need to use more force than usual to contain the horse's energy. Additional restraint may indeed be necessary to avoid the horse harming itself through over-exuberance. Riders often (and justifiably) worry that creating such restraint with a bridle and bit may risk injury to the horse's mouth; some riders resort to drugging their horses "to make them calm." The Bitless Bridle can provide such restraint without drugging or injuring the horse. In addition to reducing the risk to the horse, this also reduces the rider's risk. The actions of excited, energetic horses are not always predictable; neither are the effects of "calming" drugs. One horse may react to a "calming" drug by becoming overstimulated; another horse may become calm… and uncoordinated. There are times when physical restraint is needed, and the Bitless Bridle presents an advantage to both horse and handler because horses are far less resentful of restraint when there is no pain involved.

Which riders (and others) could benefit from the bitless bridle?

Most importantly, riders in general can benefit through a general reduction of risk. Many riders ride "front-to-back" – focusing on the parts of the horse they can see (its neck and head), and using – often overusing – the pulling power of their hands to influence the horse through the bit.

Some fortunate riders have excellent instructors and perhaps a good clinician or two, and thus are never left on their own for long periods. It's possible to be an autodidact in many pursuits; riding is not one of them.

Other riders may be isolated for reasons of location, finances, or the difficulty of finding good instruction. Working solo, it is difficult for them to judge their own and their horses' progress. Riders who wonder whether they are using the "right" bit, or whether the presence of a bit is improving or interfering with their communication with their horses, can switch to a Bitless Bridle, even on a temporary or occasional basis. If these riders make notes of the tangible changes they recognize, they will then have a more objective basis for their eventual choice(s) of tack.

Casual and occasional riders can benefit as well. Many riders have jobs and other obligations that prevent them from riding regularly. They care about their horses, and worry that their own lack of fitness and expertise could hurt their horses during those relatively infrequent rides. Riders who can't maintain the steady seat that would permit them to have light hands can use the Bitless Bridle to avoid inadvertently harming their horses by jerking the reins.

Instructors can benefit greatly, especially those whose school horses spend many hours each week carrying beginner riders. Instructors are generally very aware of the need to protect their school horses from beginners and other riders who rely on their hands to control their horses and keep themselves in the saddle. Good school horses are cherished by their owners. Since there are no shortcuts – no quick and easy ways for riders to learn balance and develop steady seats and educated hands - instructors have every reason to protect their horses whilst their students are learning the basics.

Trail ride and dude ranch operators, some of whom, in the interest of their horses' welfare, have already discarded bits in favor of halters, sidepulls, and the like. The Bitless Bridle can protect trail horses from the behavioral problems that typically develop as a consequence of carrying riders (or, rather, passengers) who are convinced that reins are handles and bits are brakes. At the same time, the Bitless Bridle - unlike, for example, a halter with two lead ropes attached - will allow more proficient riders to enjoy a gentle dialogue with the horses they've been assigned.

Owners and managers of summer camps that offer horseback riding can benefit in a similar manner, as using the Bitless Bridle can help protect the mouths and the long-term soundness of their horses.

Will changing to a bitless bridle, or alternating between a bitted and a bitless bridle, confuse horses?

As riders make more frequent use of the Bitless Bridle, they will notice improvements in their horses' behavior, comfort, confidence, gaits, and movement. In each case the horse will simply be demonstrating its reaction to the bridle that it's wearing, and its ability to perform in that bridle.

Horses are rarely confused by the Bitless Bridle. Many horses are already accustomed to wearing diverse forms of tack. A horse might wear several different saddles and bridles (or none at all) depending on whether it is being shown, schooled at home, taken out on a trail ride, or simply being ridden bareback from the pasture back to the barn by an owner who prefers not to walk and will happily use a halter and lead rope as a makeshift, temporary replacement for a bridle.

Upper-level eventers frequently use three different saddles, and often three different bridles, in competition. Lower-level eventers may use just one or two saddles and possibly the same bridle for all three phases, but often use one bit for dressage, another for cross-country, and a third for stadium jumping. Their horses quickly learn to associate specific items of tack with specific activities. In my experience, the horses are not at all confused. Nor do they become confused when, a few days later, they find themselves out on the trail, wearing a short-shanked curb and a Western saddle or purpose-designed trail saddle. Horses adapt; horses adjust. Often it's only the changes in their behavior or gaits that alert their riders to the fact that a specific change in tack has increased (or decreased) their comfort.

Alternating between a bitted bridle and the Bitless Bridle is a useful way for riders to evaluate their own skills. When riders can truthfully say that their horses perform just as well when ridden with a bit as they do in the Bitless Bridle, those riders can be justifiably proud of their achievements. Until then, riders who deliberately alternate the use of a bitted and a bitless bridle will be in a better position to evaluate their horses' comfort and their own progress as riders. The information they receive will come to them directly from the final arbiter of horse comfort and riding skills: *the horse*.

Conclusion: Making changes and reducing risks

In many cases, riders – even kind, well-meaning riders – simply don't know that some of their horses' apparent physical limitations and "attitude" issues are caused by the riders themselves, rarely deliberately but often (directly or indirectly) through the riders' choices of tack. Once aware of the causes and consequences of mouth pain in horses, many riders choose to limit their horses' bit-caused pain and distraction. In so doing, those riders greatly reduce the reactive limitations that endanger both their horses and themselves. Dr. Cook's Bitless Bridle is an excellent illustration of the concept that pain increases risk and comfort reduces it.

Riding with a halter, a sidepull, a jumping hackamore, or the Bitless Bridle requires no particular skill on the rider's part. Any rider who is capable of following basic instructions can easily control a suitably trained horse with any of these items. Riding gently with a mechanical hackamore requires considerably more rider skill, because it is a leverage device that can inflict considerable pain and cause damage to the horse's nose and jaw.

Riding with a bit requires even more skill, because the bit presses on the delicate tissues of the horse's mouth. A hard pull – sudden or steady – can cause the horse significant shock and pain. The sudden infliction of pain, or even the fear of such pain, can cause a horse to panic and express its fear by bolting, bucking, or rearing. A rearing horse that falls over backwards may die from a fractured skull; its rider may be crushed or even killed.

The stronger the bit, the greater the skill and finesse needed by the rider, and the more advanced the horse's and the rider's training should be before a strong bit is used. The ultimate test of skill with a bit would be the double bridle (two bits and two sets of reins) for dressage horses (English riding) and the spade bit (one extremely powerful and potentially very damaging bit) for bridle horses (Western riding). Riding with either form of hardware requires a highly-trained horse and an extremely secure, accomplished rider with superb riding skills, excellent body control, and great finesse. "Bridle horses" are traditionally started without a bit, graduate to a snaffle, then eventually to a curb, and finally to a spade (extreme curb). Producing a "finished" bridle horse takes many years, and the rider/trainer *must* be an expert.

At the end of the day, it's important for riders to understand that a bit is an instrument of communication – not one of control. A horse can be safely ridden and controlled without a bit. An inexperienced, unskilled rider is *more* likely to cause damage to his horse and injury to himself if the horse is wearing a bit. This is far less likely to occur if the horse is wearing a halter, sidepull, jumping hackamore noseband, or some other non-leverage form of bitless bridle. These bridles provide riders with a method of control that is effective but relatively unsophisticated in terms of communication. For the purposes of many riders, this is fine. For those riders who regard riding as an art and aspire to make constant progress, eventually making their way up – for example – the levels of dressage, Dr. Cook's Bitless Bridle offers a clear advantage: In addition to allowing the horse comfort and freedom of movement, *it permits the rider to ride with subtlety and finesse.*

Riders are often willing – even eager – to implement changes after discovering that different equipment can help their horses carry themselves better and move better. Some riders will subsequently look for tack that causes less discomfort to their horses; others may dispense altogether with some equipment that they had previously believed to be essential. Either way, the horses benefit, and their improved comfort and ease of movement will lead to horses and riders alike incurring fewer and less extreme risks.

Riders who understand the comfort-safety connection can benefit from an improved partnership with their horses, improved performance from the horses, and significantly less equine "downtime" due to behavioral problems, horse discomfort, injury, and lameness. Horses experiencing less pain and more comfort typically demonstrate greater relaxation and cooperation, as well as improved balance and movement. These factors all combine to reduce the riders' personal risk.

Win – win – win.

NOTE: In all photographs, the horses are wearing Dr. Cook's crossunder Bitless Bridles.

The EMSA recognizes the fact that the bitless bridle topic is controversial. Presentation of this and its possible relationship to safety does not necessarily constitute endorsement of this equipment by the EMSA.

BIT PROBLEMS

EMSA is dedicated to improving safety in horse activities. Our first project was to draw attention to the need for helmets, to reduce the risk of traumatic brain injuries. We subsequently promoted the use of body vests. Both of these projects have helped to reduce injuries when accidents occur. More recently, we have supported the prevention of accidents by spreading the word about improvements in the design of jumps. Since 2000, new research on the effect of the bit on horse behavior has focused our attention on yet another potential way to help prevent accidents – by using a bitless bridle, specifically Dr. Robert Cook's horse-friendly, crossunder Bitless Bridle.

Bridles with bits have been in use for thousands of years, as have bridles without bits. Both types of bridles have existed in forms from mild to severe. It has long been part of "conventional wisdom" that horses "require" bridles with bits, and much energy has been expended in designing and redesigning variations on bits – again, from the "mild" to the extremely severe. For millennia, many horses have been ridden and driven with some form of bit - hide, rope, wood, bone, metal, rubber, or one of the new plastics. The result for humans has been a strong belief – for all practical purposes a closed institutional narrative – in the "need" for a bridle with a bit, and another, equally strong, belief that the rider's control of the horse is entirely bit-dependent. Like so many beliefs, these have been challenged. During the past fifteen years, bits and bitting have been investigated more thoroughly and more scientifically than ever before. As a result, the question has evolved from "What sort of bit is best for this horse?" to "Can even the 'best' bit cause harm?" Now, it appears that the answer to this last question is "Yes." Dr. Cook's extensive investigations of this subject indicate strongly that any bit causes the horse to react in ways that are detrimental to the horse's welfare and performance.

It is true that when a rider is a master horseman with a seat of impeccable independence, the brain of a Buddha, and the fingers of a neurosurgeon, the harmony between horse and rider can

reach a level that borders on the sublime. Such a rider can indeed "witch the world with noble horsemanship."

However, master horsemen are rare. The few who exist have invested many years of study, effort, instruction, and trial-and-error to reach this pinnacle of achievement. By comparison, most of us are lesser mortals and lesser riders with unstable seats, muddled minds, and heavy hands.

In science, facts based on evidence always trump a willingness to believe in the absence of evidence. Over the last fifteen years or so, we have learned that a bitted horse is, in a very real sense, a handicapped horse. With a bit in its mouth, a horse is unable to give of its best. Horses perform, many of them spectacularly, not because of their bits but in spite of them. A bitted horse is incapable of optimal athleticism. The use of a bit can affect a horse's character for the worse and diminish its willingness to be ridden. Most riders realize that even with the most contented and compliant horse, riding is a high-risk activity. Research is steadily adding to our new understanding that the use of a bit adds to that risk, and that riding without a bit may be a significant step towards risk reduction for both horse and rider.

ONLINE RESOURCES

HORSE-SENSE newsletter (Q&A format, 1995-2014): http://www.horse-sense.org/index/ (once you are there, simply type "Bitless Bridle," "bitless bridle," or even "bit" as a search term).

Some of Dr. Cook's articles – those with a particular focus on safety – are listed below:

Cook, W.R. (2014): Measurement of bit pain in the ridden horse.
http://www.bitlessbridle.com/14MEASUREMENTPAINRIDDENHORSE.pdf

Cook, W. R. (2009): Prevention of Accidents to Riders caused by Tack: Feel it, log it, **fix it."**
http://www.bitlessbridle.com/AccidentPrevention.pdf
See also Table II from this same article; a diagnostic checklist of behavioral and physical signs caused by the bit.

http://www.bitlessbridle.com/AccidentPreventionChecklist.pdf

Cook, W.R. (2011): Dressage or Stressage? Is the discipline beyond redress? Published online:
http://www.bitlessbridle.com/10dressageorstressage.pdf

Cook, W.R. (2014): A connection between a bit in a horse's mouth, a throttled throat and waterlogged lungs. The Horses Hoof, **54,** http://www.bitlessbridle.com/A%20ConnectionBitWaterloggedLungs.pdf

Cook, W.R. (2006): Tradition and the Status Quo or Science and Advance: a welfare reform in horse sport currently denied? http://www.bitlessbridle.com/Tradition%20or%20Science.pdf

Cook, W.R. (2008): Bitless Benefits for Pony Clubs
http://www.bitlessbridle.com/Bitles%20BenefitsPonyClubs.pdf

Cook. W.R (2007): "Enabling the Disabled Equestrian" in Strides: the official publication of North American Riding for the Handicapped. http://www.bitlessbridle.com/ENABLING%20THE%20DISABLED%20RIDER.pdf

Cook, W.R. (2005): Rationale for allowing the crossover bitless bridle for racing.
http://www.bitlessbridle.com/JC_RACING_presentation.pdf
Cook, W.R. (2005): Risk and Safety Factors in Flat and Steeplechase Racing associated with all bitted bridles compared with the forecasted risk of using the crossover bitless bridle.
http://www.bitlessbridle.com/BB_SAFETY_FOR_RACING.pdf