

What is Pain?

PAIN AND BEHAVIOUR PROBLEMS IN HORSES

BY LAUREN FRASER



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Undesirable behaviours such as biting, kicking, bucking, or bolting may be indicators of pain.

Pain is a physical and psychological experience that occurs when an animal is exposed to elements that could damage their body. While the ability to feel pain is essential for life, pain can also compromise a horse's welfare or performance, and cause them to behave in undesirable ways.

When pain is detected by specialized nerves called nociceptors, two things happen. First, a signal is sent to the brain. Second, the horse's brain processes that signal. As every horse is different, some horse brains may ignore or endure the painful sensation, while others will react, and will show a wide range of behavioural responses. This variation in response is what leads to differing levels of pain tolerance among horses.

The limbic system is a group of brain structures responsible for the regulation of emotions and behavioural responses that can aid in survival. Pain is always processed through the limbic system, so when horses experience pain, they also experience unpleasant emotions. Some horses may become anxious or frightened, while others may become irritable or angry. In all instances, the horse will show these emotions through their behaviour.

Pain can be situational, in that it only appears in certain contexts. For example, a horse smacked with a whip will experience pain when struck. Or pain may be chronic, such as with osteoarthritis. While horses display behaviours caused by either type of

pain - the whipped horse may kick out, the horse with osteoarthritis may refuse to trailer load - horses experiencing chronic pain are more likely to develop negative changes in their overall mood.

The brain "practices" experiencing pain; the more chronic or severe the pain, the greater the likelihood the horse will experience new pain more severely. This can even result in the horse developing a maladaptive pain condition, where non-painful things like touch are perceived as painful sensations by the horse.

Why pain identification is important

Both short-and long-term pain can be welfare issues that lead to a decreased quality of life, and to negative emotional states such as anxiety, fear, or even depression. Pain also causes chemicals and hormones to be released in the horse's body that negatively impact physical health and reduce immune responses. Pain depletes a horse's ability to pay attention to other events happening in the moment; pain can also greatly hamper the ability to learn and perform.

All horses learn through a few basic processes. They learn that their voluntary behaviour leads to consequences that are desirable or undesirable, thus shaping their behaviour in similar future events. Horses also learn through a 'this predicts that' process, whereby certain events predict feeling positive or negative emotions. When pain is a regular

part of training, such as with osteoarthritis, when a saddle fits poorly, or when techniques like punishment are routinely used, horses often begin to behave in undesirable ways even before the event occurs. For example, a horse experiencing pain in the canter may start to rush in the walk. Or the horse who experiences pain when shod may start to become anxious and difficult to handle when the farrier's truck arrives on site.

While regular veterinary care is critical to ensure that our horses experience minimal pain, horse owners and trainers are well-suited to spot early indicators of pain by observing changes in behaviour. These changes may be obvious or subtle, depending on factors such as the origin of the pain and how long it has been occurring. Sharp, sudden pain often results in more obvious, dramatic-appearing behavioural responses. Dull, chronic pain can be harder for observers to identify.

Both types of pain can result in behaviours viewed as problematic by owners and trainers. A horse with osteoarthritis may move in an abnormal or restricted manner when ridden, may refuse to trailer load, or may display aggressive behaviours to prevent or delay events which increase their pain. Horses experiencing more situational types of pain - for example a horse experiencing a pinched nerve exacerbated by a particular ridden movement - may buck or bolt, and a horse experiencing dental pain may avoid being bridled.

Thankfully, there is a way horse owners and professionals can detect early signs of possible pain.

Identifying pain in horses

Behavioural observation is a reliable way to identify pain in horses. Standardized pain scales are tools to help identify behaviours consistent with pain in a given species.

Pain scales were developed to identify behavioural differences between animals known to be experiencing pain, and animals not experiencing pain. The scale is then assessed by training observers how to use the scale to score animals, and then having the trained observers score animals whose pain status is unknown to them.



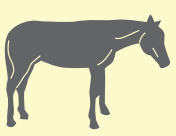


In horses, these scales may focus on a specific part of the body, or they may be composite, considering changes in numerous parts of the horse. Most scales have been tested for specific types of pain in adult horses. For example, the Horse Grimace Scale (HGS) considers slight changes in facial expressions that result from pain, and has been tested with horses experiencing pain because of castration, laminitis, and dental pain. These behaviours can be subtle, such as changes in the horse's ear position, tension around the eye or jaw, and changes in behaviour related to the chin and mouth.

This subtlety can make it difficult for untrained observers to detect pain in horses. To complicate matters, more

obvious behaviours that can be consistent with pain, such as biting, kicking, or bucking, may even be mislabelled by untrained observers; the horse may be called aggressive, dominant, explosive. In such instances, attempts may be made to train the behaviour out of the horse, but the underlying pain will remain.

While equine veterinarians are the best professionals for diagnosing and treating pain in horses, even horse owners can learn how to detect early signs of pain which may warrant a call to the vet. By understanding what is normal behaviour for horses, how pain can impact their lives and experiences, and which behavioural indicators may be consistent with pain, we can help our horses experience less pain, sooner. **CHA**

PAIN CHART

PAIN SCORE	BEHAVIOUR	CLINICAL ASSESSMENT	POSTURAL FEATURES
0	 <p>Responds with interest to gate opening, approach by observer. Takes care in movements around people. Head above withers. Attentive. Moving freely, calmly. Resting comfortably.</p>	<p>HR usually 40 BPM or below. Eyes relaxed, normally responsive. Normal muscle tension. No focal areas of heat. Not averse to palpation.</p>	<p>No lameness perceptible. Bears weight evenly. Moves with ease of stride.</p>
1	 <p>Head at or above withers. Facing forward and watching. Performs normal behaviours less frequently than expected. Responds with quiet interest to gate opening, approach by observer. Takes care in movements around people.</p>	<p>HR may be 40 BPM or below. Mild muscle tension. Mild focal areas of heat. Slightly steps, leans, or pulls away from palpation, +/- muscle twitching.</p>	<p>Lameness difficult to observe, inconsistently apparent. Mild injury or stiffness in movement.</p>
2	 <p>Head level with withers. Moving slowly about with bedding undisturbed. Mild but more frequent restlessness. Less enthusiastic, less interested, less interactive. Less careful about movements around people.</p>	<p>HR may be at or above 48 BPM. Increased respiratory rate. Moderate muscle tension. Increasing areas of heat. More averse to palpation.</p>	<p>Lameness apparent only under certain circumstances. Favours limb(s) occasionally. Obvious stiffness in movement.</p>
3	 <p>Head level with or below withers. May face back or corner of stall. More vigorous signs of restlessness. Eyes distracted, far away, weary. Minimally reacts to interaction. Stands in one position. Beginning to become internalized. Less careful about movements around people.</p>	<p>HR may be at or above 60 BPM. Elevated respiratory rate. Sweating. Severe muscle tension. Widespread areas of heat. Vigorously averse to palpation.</p>	<p>Moderate lameness. Able to bear weight but clearly favours one or more limbs. Obvious discomfort, weight shifting. Very stiff movements. Abnormal standing posture.</p>
4	 <p>Head often below withers. Stands in corner or faces wall. Ears back, eyes weary. Frequent signs of severe agitation. Extremely uncomfortable / panicky, or extremely internalized / withdrawn. Careless about movements around people.</p>	<p>HR may be at or above 70 BPM. Rapid respiratory rate. Profuse sweating. Extreme muscle tension / rigidity. Widespread areas of heat. Extremely averse to palpation, possibly aggressive.</p>	<p>Unable or unwilling to bear weight. May not be able to move. Constant shifting of weight. Very abnormal standing posture or in sternal or lateral recumbency.</p>

An equine behaviourist can help you overcome a range of issues, including difficulties with trailer loading.



Finding Help for Horses

EQUI-TREK TRAILER

WHERE TO TURN WHEN BEHAVIOUR PROBLEMS ARISE

BY LAUREN FRASER

When horses have behaviour problems, owners may be uncertain where to turn. Problematic behaviours can be dangerous to anyone interacting with the horse. They may prevent the horse from safely engaging in activities, or they may impact the horse's health, welfare, and quality of life. Thankfully, there is a new group of horse industry professionals who can help: clinical or applied animal behaviourists, and certified horse behaviour consultants.

Behaviours commonly addressed by these professionals include aggression, reactivity, dangerous behaviours in-hand or under saddle, or refusal to participate in events such as trailer loading. These behaviours can occur for numerous reasons, frequently because of fear or anxiety, prior learning, genetics, or management practices which fail to meet the horse's needs. Sometimes underlying physical or medical conditions are contributing factors. In

Using systematic desensitization and counter conditioning, a horse behaviour professional would gradually expose the horse to all aspects of the injection event, while simultaneously pairing each level of exposure with something desirable, such as high-value treats.

such instances, the horse's veterinarian will play a critical role in diagnosing and treating the horse before behaviour modification work can begin.

While horse behaviour professionals may also train horses to perform new, wanted behaviours (e.g., how to load in a trailer) the techniques used to address behaviour problems differ from those used by horse trainers. Whereas most horse trainers primarily use reinforcement to train horses how to perform wanted behaviours on cue, horse behaviour professionals use techniques such as systematic desensitization and counter conditioning to change the negative emotions which cause unwanted behaviours to happen.

For example, horses who are dangerous to handle for injections usually behave this way because they're frightened. This fear develops through an involuntary learning process called classical conditioning, resulting in a "this predicts that" effect for the horse: needles predict fear and pain. Using systematic desensitization and counter conditioning, a horse behaviour professional would gradually expose the horse to all aspects of the injection event, while simultaneously pairing each level of exposure with something desirable, such as high-value treats. This approach changes the "this predicts that" association, and the event then begins to predict good things for the horse: feeling safe and receiving treats. While these proven techniques have been researched and used for more than a century with many other species, including humans, they still are not well-known in the horse industry.

If you are looking to have your horse learn new, wanted behaviours such as

being started under saddle or trained for a specific discipline, a horse trainer is the right professional for the job. As the horse training industry is unregulated in Canada, the onus is on owners to screen potential professionals before hiring. This also applies to those seeking help for behaviour problems. While anyone can claim to be a behaviourist, the term is generally reserved for those who have a master's or doctorate in animal behaviour, or for veterinarians with advanced behaviour degrees. As

using certain training techniques can worsen existing problems or create new ones, owners looking for help should seek out qualified professionals with certifications from organizations like the Animal Behaviour Society, or the International Association of Animal Behaviour Consultants.

In addition to your trainer, coach, veterinarian and farrier, a qualified horse behaviour professional can be an excellent addition to the team of professionals that helps care for your horse. **CHA**

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