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FACTSheet

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Fear in Horses

Learn about what horses experience when they feel afraid and how to manage their fear reactions

Fear is inherent in horses, with varying levels of intensity and behavioral reactions. Significant fear reactions—bolting and rearing, for example—can lead to horse and/or human injury and sometimes to material damage as well.

Fear reactions can also determine how a horse will be used and who will ride it. Results from a survey of horse trainers showed that 56% of the dressage trainers considered fearfulness an unwanted characteristic in the horse, while only 29% of the show jumping trainers did.[1] Furthermore, particularly fearful horses are more often ridden by elite or professional riders, whereas intermediate riders are considered safer with less fearful horses.[2] If it's severe or chronic, fear can even threaten an animal's well-being.

THE ANATOMY OF A FEAR REACTION

As a prey animal, horses have evolved to be aware—and fearful—of sudden dangers, with a primary physical response of flight, which may or may not follow a short period of intense observation. They could show a startle reflex (body jerk) and stiffness. They might also make vocal noises, such as a snort, or defecate.[3]

At the start, fear can cause a horse to raise his head high, flare his nostrils, and show the whites of his eyes. The horse might also tremble and flick his tail. Knowing these early signs could help humans prevent or avoid injuries from the more dangerous reactions (bucking, rearing, and running off).

FEAR REACTIONS VERSUS FEARFULNESS

While all horses might exhibit signs of fear in different situations or to various stimuli (opening umbrellas, fire, other livestock, plastic tarps, etc.), recent research results reveal that some horses are simply more or less fearful by nature. Scientists refer to this as the "fearfulness temperament," which is consistent throughout the horse's life. Owners and trainers can potentially detect a horse's fearfulness temperament through behavior testing when the horse is as young as 8 months of age.[4]

Fearfulness is now recognized as one of the five core dimensions of a horse's overall character. Researchers have designed various tests to evaluate horses' fearfulness but have been challenged to find one that focuses purely on fear and not other traits, such as the horse's particular social needs. However, a fearfulness test that Lea Lansade, PhD, developed in 2010 as part of an overall personality test for horses has been gaining acceptance among scientists. In 2014 this test was simplified to make it easier and faster to perform while still providing reliable results.[5]

Researchers do not yet know whether fearfulness is genetic. In the late 1990s scientists found that fear reactions were more similar among half-sibling horses than among unrelated horses.[6] Today's more reliable fearfulness testing should allow researchers to test for the heritability of fearfulness in the future.

Fear responses in horses, such as spooking or shying, can lead to horse or human injury.

REDUCING FEAR

Regardless of a horse's basic fearfulness temperament, handlers can help minimize a horse's fear and fearful behaviors. Anecdotal evidence has suggested that imprinting makes horses less fearful, but recent research has shown that this early handling technique has no significant effects on fearfulness.[7]

Handling just after weaning, however, does—at least for a while. When foals were haltered and petted daily, separate from other foals, in the first 12 days after weaning, they were less fearful than control foals with the same handling three to four weeks after weaning. The foals handled just after weaning showed less prominent reactions when separated from their groups, approached by a human, exposed to a new object (pylon, plastic bags), and surprised by an opening umbrella.[8]

Young foals who saw their mothers accept frightening stimuli also had reduced fear reactions. Researchers exposed mares to several scary situations (opening umbrellas, plastic bags placed on them, etc.) for eight weeks starting at foaling. The foals were able to observe their mothers' reactions. At 8 weeks and 5 months of age, the foals were exposed to the same stimuli, as well as new stimuli they had not seen before. Compared to control foals, they were calmer—even with the new stimuli—and had lower heart rates.[9]

Enriched environments—those with social companionship in shared pastures, frequent feedings, and regular sensory stimulation (objects and music)—appear to reduce fear reactions, too. Yearlings housed in enriched environments became less fearful after five weeks than controls living in individual housing with individual paddocks and fed three times a day.[10]

MANAGING FEAR REACTIONS

When horses do show fear reactions, especially to frightening objects, it's usually best to help them approach the object. While this might induce more stress initially, horses will habituate to objects faster than if they're left to discover them on their own.[11] That's not recommended, though, if it puts the human or horse in significant danger. When there's high risk, such as when treating a sick or injured animal, applying various learning theory techniques—overshadowing and gentle negative reinforcement, in particular—can result in rapid learning that allows the horse to accept frightening stimuli, even in a hospital environment.[12]

When time isn't an issue, handlers can gradually introduce the source of fear into a horse's daily environment to help reduce his reactions. If a horse is afraid of cows, for example, pasture him near cows and, eventually, in the same field as the cows to help him overcome the fear.[13]

A calm companion can be a useful training aid in frightening situations as well. Two-year-old stallions confronted with scary situations had lower heart rates and fewer fear reactions, compared to control horses, when they were accompanied by horses already habituated to the fear source.[14]

LOVING THE NATURALLY FEARFUL HORSE

A naturally fearful horse learns better than a less fearful horse—as long as the fearful horse is free of external stress. Stress related to the actual learning task at hand won't affect learning. This improved learning might be related to the finding that fearful horses are more habit-forming—for good and for bad.[15]

Horses with a stronger fearfulness temperament also learned better in Pavlovian-to-Instrumental-Transfer training, a kind of test in which horses learn to associate audiovisual cues with a task in order to get a reward.[16]

Show jumpers testing high on the fearfulness factor were more difficult to ride, but they had the fewest penalties in competition during a recent study.[17] Generally though, jumpers are less fearful than eventing and dressage horses.[18]

Fearfulness isn't necessarily a negative trait. As researchers are finding out, fear has many advantages. Provided the horse is trained and managed properly, with its fearfulness in mind, it can become a healthy, high-achieving horse.

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