# Improved Training Methods are Necessary to Improve the Welfare of the Ridden Horse

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## Introduction

The welfare of the ridden horse has recently come into question, with concerns focused on current training methods. Traditional horse training aims to gain control over the horse's behaviour through the use of negative reinforcement (Hall *et al*., 2008). This involves the removal of an aversive stimulus upon performance of the desired response (Hall *et al*., 2008). While the correct use of negative reinforcement is not detrimental, behavioural problems may manifest if pressure is used incorrectly (McGreevy, 2007). The addition of positive reinforcement is one method by which welfare could potentially be improved (Heleski *et al*., 2008).

## Discussion

Previous studies have described a psychological condition known as "learned helplessness" that occurs in animals exposed to repeated, unavoidable aversive stimuli (Hall *et al*., 2008). After learning that their reactions are futile, these animals may become unresponsive in future similar situations (Hall *et al*., 2008). Hall *et al*. (2008) explored this concept in horses, using results from studies in other species as a model. There are many aversive techniques used in horse training that have the potential to induce learned helplessness (Hall *et al*., 2008). A lack of motivation and anhedonia has been attributed to this, as well as increased health problems such as gastric ulcers (Hall *et al*., 2008), so it appears that being in a state of learned helplessness may compromise the horse's welfare, both physically and psychologically.

One training method that gives rise to welfare concerns is Rollkür (von Borstel *et al*., 2008). Rollkür is described as a coercively obtained hyperflexion of the horse's neck, used to "improve suppleness" of the neck and increase responsiveness (von Borstel *et al*., 2008). It has also been claimed that Rollkür has positive effects on locomotion through increased elasticity and decreased stride length (van Weeren, 2006). A study by von Borstel *et al*. (2008) aimed to determine if horses showed a preference between two riding styles – regular poll flexion and Rollkür. Regular poll flexion maintains the nose-line on or just in front of the vertical (von Borstel *et al*., 2008). Lesions and pain in the nuchal area and withers may result from stress placed on the intervertebral discs when in the Rollkür position (von Borstel *et al*., 2008). In the Rollkür study, 15 horses were ridden 30 times through a Y maze, alternating randomly between sides (von Borstel *et al*., 2008). Riding through one arm of the maze was followed immediately by a short round ridden in Rollkür, while riding through the other arm was followed by a short round in regular poll flexion. Horses were then ridden into the maze and allowed to choose which side they entered (von Borstel *et al*., 2008). The results showed that when in the Rollkür position, horses moved more slowly and exhibited more behavioural signs of discomfort, such as head tossing and attempted bucks (von Borstel *et al*., 2008). Furthermore, 14 of the 15 horses chose the arm associated with regular poll flexion over that associated with Rollkür. These results were the same regardless of the horse's previous experience with poll flexion (von Borstel *et al*., 2008). The use of 2 large groups of horses, one accustomed to training in Rollkür and the other used to normal poll flexion, would further validate these results.

Conflicting signals and inconsistent training methods are a possible source of inescapable unpleasant experiences (Hall *et al*., 2008). The simultaneous use of "forward" and "stop" signals may lead to decreased responsiveness to the more aversive stimuli (overshadowing) (McLean, 2008). As horses held in the Rollkür position are being forced to respond to conflicting signals (rein tension pulling their head down and leg pressure moving them forward), responsiveness to bit pressure is likely to decrease. This may lead to dangerous behavioural problems such as bolting.

If an aversive stimulus is not consistently removed at the correct time, the response will sometimes not be reinforced, creating confusion (McGreevy, 2007). The extent to which the bit causes pain is most likely related to pressure exerted by rein tension – something inexperienced riders have little control over (Hall *et al*., 2008). The repeated aversive experiences created by these riders may lead to horses habituating and becoming unresponsive to a rider's signals. Similarly, the repeated use of leg signals may cause the horse to become "lazy" (Hall *et al*., 2008). There are some situations where this unresponsiveness is desired by trainers (e.g., riding schools providing "bombproof" horses for novice riders). These horses may appear "relaxed", but could rather be suffering from anhedonia associated with learned helplessness.

The addition of positive reinforcement to horse-training programs has been shown to improve motivation and increase trial-and-error behaviour (Innes & McBride, 2007). A study by Heleski *et al*. (2008) tested the hypothesis that the addition of positive reinforcement to a training regime would enhance learning in horses being taught a frightening task (e.g., to walk over a tarpaulin). An experienced trainer handled half the group with negative reinforcement (release of the halter/lead pressure when the horse walked forward) (Heleski *et al*., 2008). Positive reinforcers (food and verbal praise) were used in addition to this in the other half (Heleski *et al*., 2008). No significant difference was detected in learning times between the two groups (Heleski *et al*., 2008). However, horses in the positive reinforcement group appeared "calmer", making the task potentially less dangerous for the trainer and less stressful for the horse (Heleski *et al*., 2008). Although greater numbers of horses must be tested to confirm these results, it appears that the addition of positive reinforcement to training may produce a more relaxed horse, improving welfare. Future studies should look at ways of incorporating this into riding training.

Recent studies have developed a technique to accurately measure rein tension (Warren-Smith *et al*., 2006). This gives riders the ability to minimise pressure on the horse's mouth by using a lighter contact, reducing discomfort from the bit (Hall *et al*., 2008). Further scientific research into equine behaviour and learning is needed to create accurate parameters to measure welfare.

## Conclusion

To improve horse welfare, studies must focus on ways to improve the quality of life for horses potentially suffering from learned helplessness. Riders and trainers must be made aware of the aversive nature of many pressure-based signals, and the importance of correct and consistent rewards. The addition of positive reinforcement to training schedules may improve motivation and calmness, further promoting the ridden horse's welfare.

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