

# The mark of the beast: tradition or stress?

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For animal welfare reasons, many veterinarians are currently promoting the method of implanting a microchip over the traditional practice of branding. However, officials of major sport horse breed registries deny that branding really causes pain or stress to foals. The team of Christine Aurich at the University of Veterinary Medicine, Vienna has now examined the effects on foals of the two methods. The results have just been made available online in *The Veterinary Journal*.

For a variety of reasons it is important to be able to identify farm animals, horses and small [companion animals](#). [Farm animals](#) have generally been marked by branding with hot irons or by ear-tagging, while more recently dogs and cats are being uniquely identified by the implant of a microchip transponder. Horses have traditionally been branded but many countries are now moving towards the use of microchips. Branding is still permitted in Austria and Germany, although the German parliament is currently discussing following the lead of Denmark, which banned the practice in 2009. Similar discussions are taking place in the USA and Australia. The underlying belief is that the use of microchips is more humane but is this really the case? The group of Christine Aurich at the University of Veterinary Medicine, Vienna (Vetmeduni Vienna) has now shown that the short-term differences are far less dramatic than animal rights activists may have us believe but that hot-iron branding has prolonged effects that may negatively affect the welfare of the foals.

Previous work had suggested that branding was significantly more stressful than implanting a microchip but the studies were carried out in

adult horses and no investigations had been undertaken in foals, although horses are generally marked as foals. In collaboration with other scientists at the Vetmeduni Vienna, Regina Erber in Aurich's group therefore examined the levels of [stress hormones](#) in the saliva of foals when they were branded or when a microchip was implanted in their necks. She also monitored the behaviour, the body temperature and the heart rates of the foals while they were marked and afterwards (changes in heart beat are associated with stress). The results showed that both methods were associated with similar acute levels of stress to the animals: cortisol concentrations in the saliva increased similarly and in each case there was a similar transient increase in heart rate and in aversive behaviour. It seems, then, that the immediate behavioural and physiological changes caused by both methods are extremely similar. Furthermore, they appear at least in part to be caused by handling and fixation of the foals and not by the actual marking procedures.

Not surprisingly, branding caused a skin burn that lasted for about a week. However, branding was also found to be accompanied by a generalized increase in skin temperature that lasted for several days. This is comparable to the response of humans to severe burn injuries. These changes were not found in foals that were not branded but instead marked by means of a microchip. The new results thus show that tissue damage caused by branding in foals is far more pronounced than expected.

Unlike adult horses, then, foals suffer very similar [levels of stress](#) immediately after they are branded or have a microchip implanted. However, branding induces more prolonged alterations in foals than implantation of a microchip. As Aurich points out, "branding but not [microchip](#) implantation causes a necrotizing burn wound and a generalized increase in superficial body temperature, which together are indicative of significant tissue damage." Studies that focus solely on the acute stress response thus underestimate the effect of branding on the

welfare of the animals.

**More information:** The paper "Physiological and behavioural responses of young horses to hot iron branding and microchip implantation" by Regina Erber, Manuela Wulf, Mareike Becker-Birck, Susanne Kaps, Jörg Aurich, Erich Möstl and Christine Aurich has just been published online in "The Veterinary Journal" ([dx.doi.org/10.1016/j.tvjl.2011.08.008](https://doi.org/10.1016/j.tvjl.2011.08.008)).

Provided by University of Veterinary Medicine -- Vienna

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