EQUINE VETERINARY EDUCATION
Equine vet. Educ. (2016) •• (••) ••–••
doi: 10.1111/eve.12677

Editorial

A life less solitary

The impact of stable design upon equine welfare has once again come under recent scrutiny in the UK, with calls for more welfare friendly housing to be investigated and introduced where possible. Confining a horse to a stable restricts interaction with conspecifics and limits the ability to move and forage. For a social, free ranging species this can be challenging. From a veterinary perspective, a suboptimal environment and the associated adrenal response can be detrimental to horse health and manifest as damaging stereotypic or even dangerous behaviour. This has safety implications for horses and handlers, including veterinarians.

Despite a growing body of evidence which reports that keeping horses in groups best meets their physical and behavioural needs, many horses still continue to be housed individually. The key reason for this continued isolation appears to be concern regarding equine group dynamics and the resultant risk of injury. Horses kept at livery yards are often turned out in unstable groups with individuals being continuously removed and replaced. This can contribute to elevated levels of aggression within the group. In discussion with horse owners, some feel that their horses do not mind, or even enjoy being stabled. This is largely based on the anthropomorphic belief of what the horse finds comfortable and not on the horse's physiological and behavioural needs. Veterinary schools across the UK spend time teaching their students husbandry and management systems for farmed animals that ensure optimal welfare, yet traditional housing of horses is still regarded as acceptable when research findings state otherwise.

Emerging housing solutions

Inventive, welfare friendly housing systems are now emerging with recommendations for use based on scientific evidence and improved knowledge of equine social structure and behaviour. The ultimate aim is to provide practical housing that is welfare friendly for all horses and facilitates movement and trickle feeding, with no increased risk of injury to horse or handler.

Although this concept is a challenging one, there is now a movement towards improved stable design, in particular in Northern Europe, where specific legislation exists related to minimum stable dimensions and turnout time. Guidelines in the UK are not this specific, but do state that horses should be given the space appropriate to their physiological and ethological needs in accordance with established experience and scientific knowledge. Established experience has largely continued to house horses individually; however, scientific knowledge is now growing and results of numerous studies agree that it is time for a change.

Concerns regarding injury in group housed horses are being addressed. Work by Jørgensen *et al.* (2009) reported that 80% of all aggressive interactions recorded in group housed horses were threats, not involving physical contact as would be the case in free ranging horses. Very few injuries were found and most were superficial. Current findings highlight that the important preventative factors to consider when group housing horses are early social experience, management of feeding and space allowance and this is where future research must focus.

Horses housed in groups from an early age display less aggressive behaviour to both known and unknown conspecifics, as is the case in a range of species. Group housing therefore provides the opportunity for horses to develop their social skills and improve the chances of successful group living as adults. Group housed horses have also been shown to be more adaptable to training (Rivera *et al.* 2002) and show decreased objectionable behaviour and a reduced adrenal response when compared to individually housed horses (Yarnell *et al.* 2015). Recommendations on group composition and introduction of horses to group living is available (Hartmann *et al.* 2011); however, this is largely in scientific format and inaccessible to everyday horse owners, resulting in a lack of guidelines for the general public and professionals alike.

Movable walls placed in the centre of existing barn style housing are becoming increasingly popular. This provides low-ranking horses with an area to eat and rest peacefully without the risk of becoming trapped or cornered by higher-ranking individuals. Larger combination barns suitable for three or more horses with an outdoor area offer improved social contact and space. Electronic feeding stations that respond to an individual chip that the horse wears allow peaceful feeding and provision of ad libitum forage which is individually accessible to all horses can help to reduce aggression (**Fig 1**). If group housing is not possible then terraced individual paddocks with stables attached provide some physical contact and improved space with a reduced risk of injury (**Fig 2**).

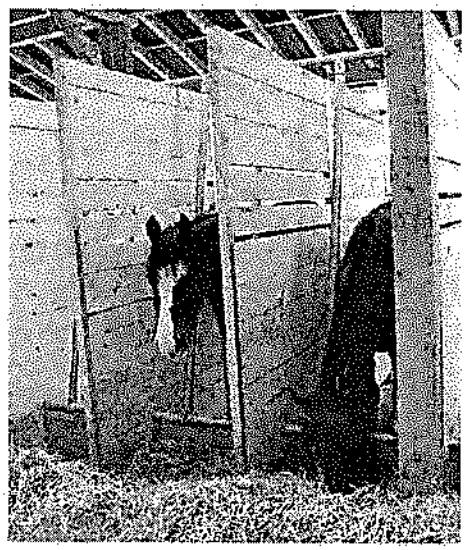

***Fig 1:** Provision of ad libitum forage which is individually accessible to all horses can help to reduce aggression. Photograph with kind permission of Agroscope, Swiss National Stud Farm.*

EVE Journal Code | 12677 Manuscript No. | WILEY | Dispatch: 22.9.16 No. of pages: 2 | CE: Keerthana J PE: Raghu B.
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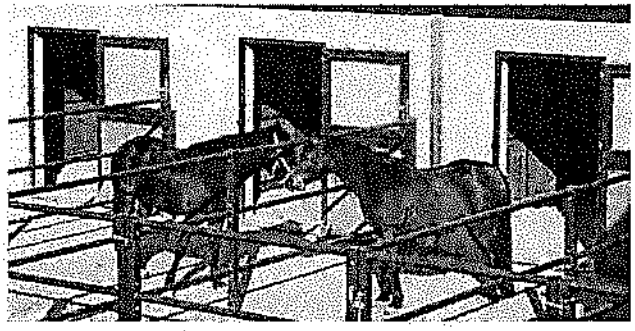

Fig 2: Terraced individual paddocks with stables attached provide some physical contact and improved space with a reduced risk of injury. Photograph with kind permission of Agroscope, Swiss National Stud Farm.

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Fig 3: Stables at Nottingham Trent University have an internal window allowing physical and visual contact and companionship.

Developments in outdoor housing of horses includes tracked systems and active stables designed to encourage movement. The design of mini home ranges using the natural grazing behaviour of horses are also growing in popularity, as in the equicentral system. This system involves a linked paddock design with a communal yard where shade and water are provided. Horses will graze and then voluntarily return, rest, drink and congregate in a central area. In addition to the equine welfare benefits, this system reduces pressure on paddocks and offers sustainable land management. The system can be modified or smaller elements used for smaller areas of land.

If group or extended outdoor housing is not possible then social contact can still be facilitated in individually housed horses. Minor modifications to existing housing can be made. Leaving the upper half of stables open or replacing solid walls with appropriately spaced bars is currently being used successfully at the Swiss National Stud. Even placing a window between stables allows for some physical and visual contact and companionship (**Fig 3**).

Conclusion

Each horse is an individual and therefore there may not be a single optimal way to house them. In the UK there is a push for better welfare in farmed animals, yet many people are still happy to keep horses in a way that does not reflect their needs as a species.

More work is needed to objectively assess realistic and practical housing design that offers improved equine welfare but also minimises risk of injury to horses and their owners, trainers and veterinarians. In addition to this there is an apparent need for guidance on successfully introducing horses to group living. These factors combined will provide the evidence needed for optimal housing and improved health and welfare for our horses.

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