



Confinement

by Dr. Brie Hamblin DVM



U
N
O

A
L
L
A

V
O
L
T
A
—

O
N
E

A
T

A

T
I
M
E

Reprinted with permission of "Horses for Life"

Have you ever asked yourself why you want your horse in a stall? Is the answer that it is what is best for the horse? Or because it is convenient for you?

Why would you take a historically pasture-grazing animal, meant to roam literally miles a day, and park him in a stall? When did we decide that was a good idea?

Confining our horses occurs for a number of reasons: because of lack of turnout space, because of convenience and easy access (no pasture wandering involved here), because we think it is too cold out, it's raining.... The list can be endless.

I propose we stop and think about what we are doing to our animals. Placing our horses in a barn leads to a number of different health and behavioral issues. Colic, behavioral stereotypies, recurrent airway obstruction, other inflammatory airway diseases, loss of bone density, decrease in GI motility, to name a few.

Barns are known for their dusty air and poor air quality. Many barns will not, or cannot, fully empty the stalls and so water and ammonia build up. Wet environments breed more bacteria. The result, more bacteria means that there is more endotoxin present. Endotoxin is a toxin that is released when a microorganism dies and pieces of its cell walls break down. Endotoxin has been demonstrated to cause airway inflammation in horses. Horses that are confined to stalls are subjected to higher concentrations of endotoxin than horses that are out at pasture (1).

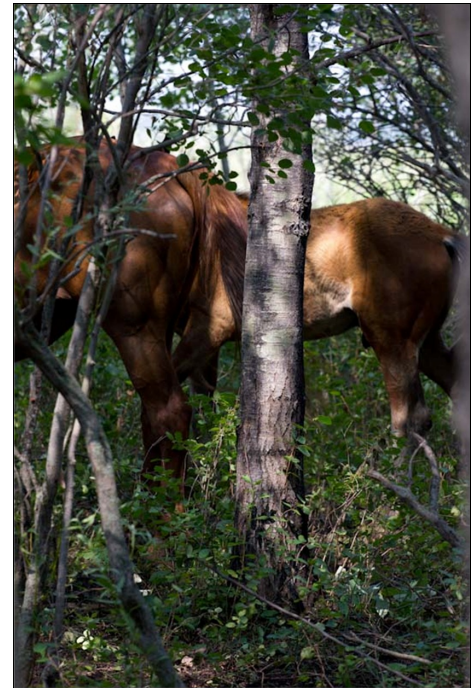


Fans are not the solution to the problem either. They can stir up dust and debris and mix it around. The whole building needs to be specially designed in order to ensure complete air exchanges in a short amount of time.

Obviously anything that reduces moisture will help with air quality. Completely gutting the stalls is best. Stalls also should be cleaned/picked out more than once a day. Feeding soaked feed right away and not allowing it to sit is important. Keeping horses in for as little time as possible will also improve air quality in the barn.

Although colic is not directly correlated with stall confinement, horses that experience a drastic reduction in exercise or daily turnout to solely stall confinement are more likely to colic (2). This implies that exercise and movement improve GI motility; when they are taken away, GI motility is reduced. We have known for decades that these principles are true for humans as well.

Equine gastric ulcer syndrome (EGUS) can be caused by many 'risk factors', including competition, limited access to feed or irregular meal times, heavy exercise, or high grain diets. But stall confinement also plays a role in the development of gastric ulcers. A study by Murray et al. showed that horses developed gastric ulceration when they were moved from pasture to stall confinement with free choice hay (3).



U
N
O
A
L
L
A
V
O
L
T
A
—
O
N
E
A
T
A
T
I
M
E



Bone density is also highly dependent on the forces the bone is subject to. In another study, highly conditioned Arabian horses were subjected to stall confinement with twice daily 30 minute workouts on a treadmill (4). The researchers found that after 12 weeks of this their bone mineral content had significantly decreased.

The bone mineral content was determined by radiographic photometry in the study (4). Even supplementing these horses with extra dietary calcium did not influence the bone mineral content (4). The authors believed that there would be an increased risk of fracture if intense exercise was abruptly started (4). This brings a new meaning to 'use it or lose it!'



I would argue that many of our equine friends are subjected to this type of confinement, particularly the ones that are "turned out" into glorified slightly larger outdoor stalls. I have personally become very frustrated with the type of stabling and turnout offered by boarding stables. As time passes, the turnout pens get increasingly smaller. While I realize that most of this must be for financial reasons, there has to be a point where the negative effects on the horse outweigh our desire to turn a profit.

If you were enclosed in a box 12 hours a day or more what would you do? How about crib, weave, pace, paw, nod, head shake, or eat your enclosure? Stereotypies are common to animals whose environmental needs are not being met. It is very hard for a pasture-roaming herbivore to be enclosed in a stall with nothing to do. The study referred to above mentioned that even horses that were fed free choice hay still developed gastric ulcers, so feeding alone is not enough stimulation.



According to another article presented at the AAEP (American Association of Equine Practitioners) convention in 2005: "The equine industry should, however, be concerned that these behaviors are typically associated with a poor environment and psychological problems in other captive species and therefore, are a major welfare concern." (5). Further research has determined that stereotypies are both inherited and learned. No one factor makes a horse predisposed to the development of a stereotypy.

The article did note "Specifically, McGreevy et al. [1] found that feeding <6.8 kg of forage per day and feeding hay as opposed to other forage increased the risk of abnormal behavior, especially weaving and wood chewing. Offering forage more than three times a day was also associated with an increased risk of abnormal behavior in this study" (5). Likely the delivery of food also results in nickering, pawing, weaving and other behaviors we see when feeding a barn full of horses, hence the increase in stereotypical behaviors.

It is also commonly assumed that a horse that possesses a stereotypy will "teach" the other horses in the barn to develop the same behavior. According to the authors "However, the evidence for social learning is very poor, and it is likely that other processes may underlie this perception. For example, phenomena such as social facilitation, which is the release of an already established behavior in the presence of another engaging in it (this is not the same as imitation) could account for the sudden occurrence of the problem in one horse after the introduction of another expressing the behavior more overtly." (5). Even so, trying to isolate the horse with the stereotypy can make matters much worse as then he/she will suffer from social isolation, which is a cruel way to treat a horse.

In general "As a simplification, it would seem that confinement for more than a given number of hours in the day (~4 h) may be the important factor" (for developing a stereotypy)(5).

As responsible owners, we want to do what is best for our horse. Sometimes life and convenience get in the way. However for a horse, outside is always better.

1) Berndt A, Derksen FJ, Edward Robinson N.2010. Endotoxin concentrations within the breathing zone of horses are higher in stables than on pasture. *Vet J.* 183(1):54-7. *Epb* 2008 Oct 18.

2) White, N.A., 2005. Prevalence, Demographics, and Risk Factors for Colic. www.ivis.org/proceedings/aaepfocus/2005/white1.pdf

3) Murray MJ et al. 1996. Effect of intermittent feed deprivation with ranitidine administration, and stall confinement with ad libitum access to hay on gastric ulceration in horses. *AJVR.* 57:199-1603.



4) Porr CA, Kronfeld DS, Lawrence LA, et al. 1998. Deconditioning reduces mineral content of the third metacarpal bone in horses. *J Anim Sci.* 76:1875-1879.

5) Mills, D.S., Taylor, K.D., Cooper, J.J.. 2005. Weaving, Headshaking, Cribbing, and Other Stereotypies. *51 Annual Convention of the American Association of Equine Practitioners - AAEP, 2005 - Seattle, WA, USA, (Ed.)*. Publisher: American Association of Equine Practitioners, Lexington KY. Internet Publisher: International Veterinary Information Service, Ithaca NY (www.ivis.org), Last updated: 5-Dec-2005; P2636.1205

U
N
O

A
L
L
A

V
O
L
U
N
T
A
—

O
N
E

A
T

A

T
I
M
E