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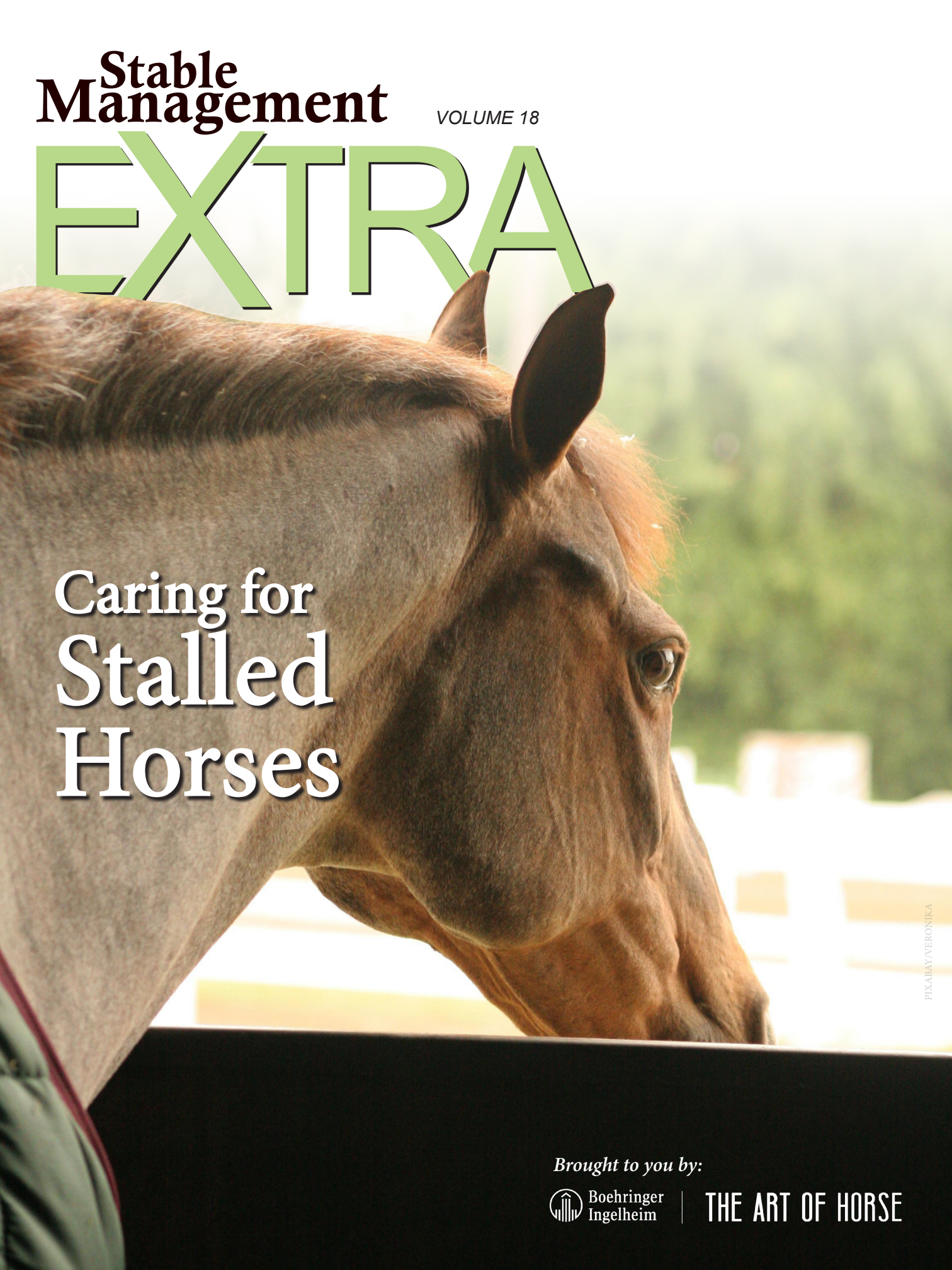
Caring for Stalled Horses



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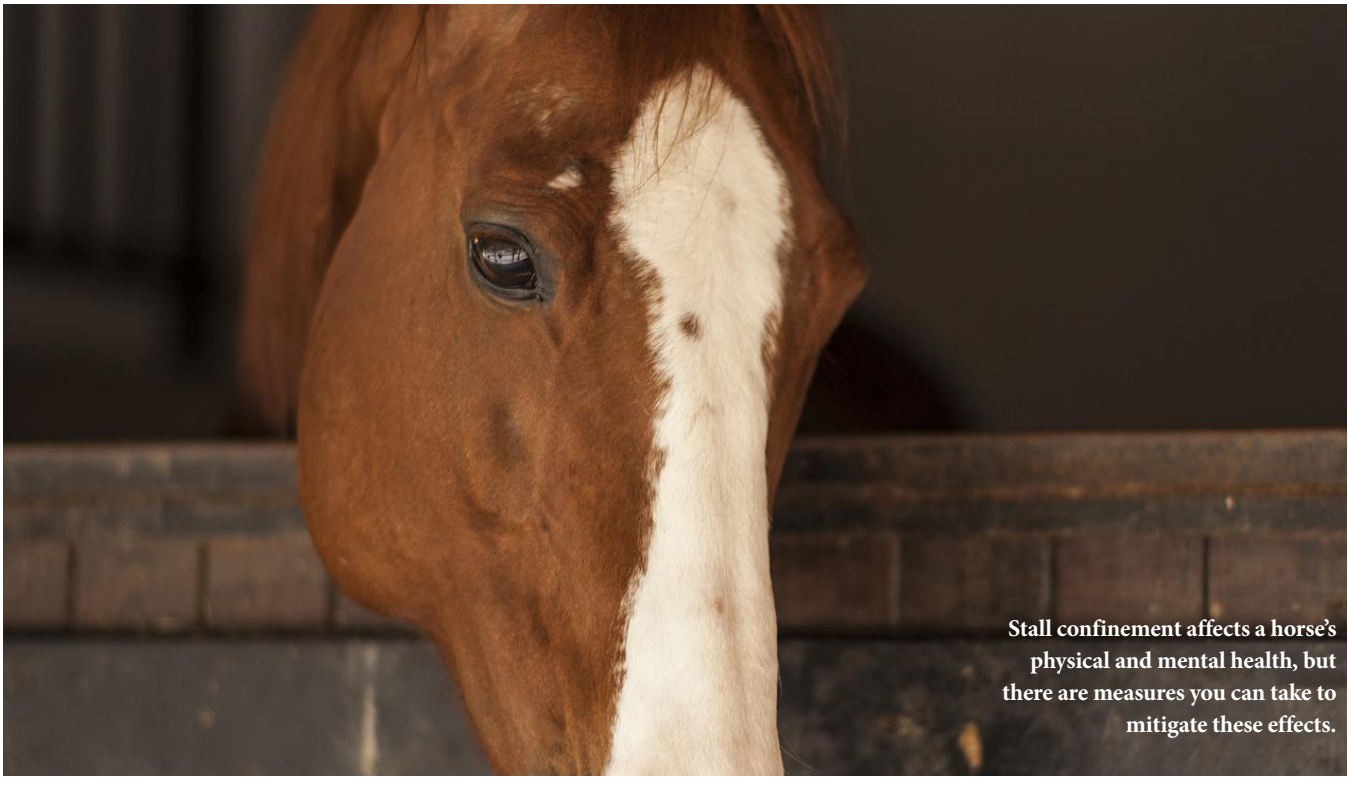

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Stall confinement affects a horse's physical and mental health, but there are measures you can take to mitigate these effects.

Ways to Keep Horses Healthy and Happy in Confinement

Horses are naturally suited for life in a pasture, but for many stables, that luxury just isn't possible. Here are ways to help improve the health and happiness of stall-confined horses.

By Nancy S. Loving, DVM

Many horses spend much of their time in a stall or a small paddock due to a property's space constraint or for easy access while the horse is in training. However, there are consequences to this lifestyle. By understanding how stall confinement affects a horse's physical and mental health, you can take measures to mitigate these effects.

The Stall Environment

Indoor living poses a challenge to a horse's respiratory health. If you've ever walked into a barn and been hit with the brunt of ammonia fumes from urine, you know what we're talking about. The enclosed space of a stall environment experiences microclimate effects not just from microbes but also from various environmental exposures and particulates dispersed from feed, bedding, footing materials, and diesel exhaust from tractors in the aisleways.

Such air-borne contaminants can lead to inflammatory airway disease (IAD), currently referred to as equine asthma.

Fecal matter, hay, and straw contain a substance that also generates respiratory inflammation: endotoxin, which is a component of the bacterial cell wall of Gram-negative bacteria that is liberated as these bacteria die. Endotoxin adheres to airborne particles that may then be inhaled.

Neither horse nor human does well when breathing in this potent substance; the airways react to this foreign protein (referred to as an antigen) by inducing an aggressive inflammatory response. Dust exposure—often containing endotoxin—can cause inflammation, mucus production, and breathing difficulty, all of which impair performance.

Soaking hay helps minimize dust and respiratory irritants. However, bacteria grow exponentially in moist materials, making wet hay a rich source of endotoxin. Feed only as much wet hay as can be consumed quickly.

Improved air quality in a stall depends on effective ventilation with ample air exchanges per minute. You might think that using a fan would help, but it may do just

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Good ventilation is important for your horses' respiratory health. Consult with expert barn builders and your veterinarian for design ideas.

the opposite by whipping up dust and endotoxin into the air. Curtail barn activities that increase dust particle concentrations in the air, particularly in stalls in proximity to manure handling, air-moving fans, or foot traffic.

Unfortunately, pasturing a horse outside doesn't necessarily eliminate exposure to endotoxin. Wind currents and stamping horse feet stir up manure and dust, especially when horses congregate in one area; even pastured horses may be exposed to an endotoxin level similar to that experienced in a stall environment.

Here are some strategies you can use to minimize environmental dust and respiratory irritants:

- Feed quality, low-dust hay and use quality, low-dust bedding.
- Clean stalls and paddocks once or twice daily to remove manure and urine-soaked bedding or dirt.
- Wait until horses vacate the barn before mucking, raking, sweeping, and leaf blowing.
- Use fans only in areas where they don't whip up barn or stall dust.
- Good ventilation throughout the barn is paramount to respiratory health. Consult with expert barn builders and your veterinarian for design ideas.
- Store hay in an area separate from the barn rather than using a loft over the stalls, arena, or barn area.

Intestinal Health

A stalled horse is often subject to specific feeding programs (twice daily, for example) that tend to increase the potential for colic problems as compared to horses living in pasture with the ability to regulate their own feeding patterns. Horses that experience recently imposed stall confinement have 54% more cases of impaction colic than those living in more open areas.

It is also reported that 62% of colon impactions occur within two weeks of significant management changes, such as stall confinement or transport. It is the "change" that makes the difference, especially with concurrent changes in feed and housing that pose greater risks of adverse effects on intestinal health.

That said, a horse accustomed to stall confinement and consistent feeding is not as badly influenced by additional stall time once acclimated to this routine.

Dietary modifications are important when managing confined horses; minimize changes in feed type, volume, and feeding frequency, and ensure ample water availability. Lack of exercise leads to weight gain, so reduce feed quantity, especially of concentrated supplements. Feed less calorie-rich hay to horses prone to gastric ulcers so they can nibble hay throughout the day without becoming obese. Equine gastric ulcer syndrome also develops due to stress, so good management strategies rely on efforts to minimize overall stress.

Exercise yields multiple benefits to intestinal health by increasing metabolism and improving intestinal motility. Even light physical activity, like walking, stimulates GI motility. Fiber digestibility increases by 20% in horses that exercise.

Additionally, there is greater retention of the fluid part of the diet and shortened retention of the more formed, particulate part of the feed—this helps to deter impaction colic. While dietary changes challenge equine digestion, decreases in activity due to restricted exercise also can create digestive problems leading to colic. Careful monitoring of appetite, manure, and urine output is important.

Effects on Performance

Fitness is proven to improve in horses that are given pasture and exercise compared to those that are confined. Pastured horses demonstrate lower heart rates during exercise, faster heart rate recovery, lower lactate concentrations, and they develop increased bone density. These findings are significantly different from stalled horses, regardless of their exercise level.

In one study, GPS units that monitored movement over a 24-hour period showed that horses pastured full-time tend to travel an average of 6.7 miles, which is twice the distance of those provided only paddock turnout at night. Stall-confined horses, with or without exercise, travel only ¼–½ as far as those in a pasture. Being more sedentary impacts intestinal health, muscle tone, joint lubrication, and cardiovascular fitness.

Effects on Growth and Development

Restricting exercise of a young, growing foal has been proven to slow cartilage development in joints; this is reversible once a foal is provided with regular pasture exercise. Normal weight-bearing exercise is necessary for normal equine limb development with integrity of the bone, joint,

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Being sedentary and stall-bound for prolonged periods may cause a horse to channel that energy and frustration into problematic behaviors.

ligament, tendon, and muscles that are important for adult athletic capabilities and resistance to injury.

Before five months of age, juvenile articular cartilage remodels to develop characteristics important to the future strength and resistance of joints to injury. Functional adaptation of "impressionable" cartilage progresses via weight-bearing exercise to a "mature" state by 18 months of age. Stall confinement of a young horse can lead to potential cartilage injury if short bouts of intense exercise with turnout are superimposed on unconditioned joints.

Imbalances between growth and exercise can lead to flexural deformities (orthopedic disease) as well. Once signs of orthopedic disease are present—for example, problems in the physes (growth plates) or angular limb deformities (crooked legs)—exercise restriction may be necessary to manage pain and growth abnormalities.

Ideally, growth and musculoskeletal problems in a growing foal are thwarted by providing the foal ample exercise to enable cartilage to respond to exercise stimulations. This understanding provides an invaluable tool and window of opportunity for an owner to help "shape" a durable athlete.

Confinement for an Injury

Stall rest is sometimes necessary in certain situations, such as for a musculoskeletal injury or a serious health problem. A short period of confinement (weeks) has little influence on joint and musculoskeletal tissue health and maintenance. However, anxious horses may move around more in a stall than in paddock confinement so 'rest' needs to be tailored for each individual to be effective.

A horse owner can help with the physical therapy of an injured, stall-confined horse by performing passive flexion and range-of-motion exercise and stretches guided by consultation with their veterinarian.

Behavioral Effects

Horses are social animals used to moving large distances when enough space is provided. Behavioral problems may develop when a horse is isolated from others, especially if confined. The lack of activity in a stall often results in overzealous activity when a horse is given the opportunity to exercise. Controlled exercise is important to ease a confined horse into more freedom.

A confined horse is often denied the opportunity for normal social interaction and grazing. How much exercise a stalled horse needs each day depends on many factors, not just exercise. Absolute time out of the stall is not the critical factor; what a horse is able to do in the time outside the stable is equally, if not more, important.

Frustration in being sedentary for prolonged periods may cause a horse to channel that into problematic behaviors such as weaving and crib biting. With time, restrictions on movement, social interaction, and grazing can also cause a horse to be more likely to misbehave during handling, trailer loading, and riding activities; such outbursts can impact horse and rider safety.

A stall-sized run with an inside stall provides clean air and a place to look around at the world. Whenever possible, give horses as much outside time as reasonable for mental and physical health. Stall-sized panel enclosures can form outdoor confinement areas that allow a horse access to fresh air along with physical and visible proximity to other horses. Grazing time is achieved by setting up the panel enclosure on grass and moving it at regular intervals to new grassy areas. It helps to give a confined horse some method of engaging his mind.

Stall toys may also help relieve boredom. Hand-made toys are useful provided they are rounded with smooth edges and don't contain small parts that could be swallowed.

A useful toy is crafted by placing hay cubes, apple pieces, and carrot pieces into a plastic gallon jug which is then hung from the rafters. Another distraction from boredom is a food popsicle: add water (or juice) and cut-up fruits or veggies into a plastic container then freeze. Then, remove the plastic and put the "food-sicle" into your horse's feeder where he'll amuse himself by licking and gnawing at it to get at the treats while the ice melts.

There are also commercial stall toys that hold treats and can be rolled around by the horse, with treats falling out occasionally. Or, a Jolly Ball has a handle that allows a horse to amuse himself by tossing around and kicking the ball.

The Bottom Line

Every horse tolerates stall confinement differently. Horses thrive best when given space to move, socialize, and play, even for just part of the day. Attention to these many details helps a horse's body and mind withstand the challenges posed by spending significant time in a stall. SM

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