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## The Stabled Horse, Part I

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After a hard day's work, we all like a restful bed in a comfortable environment. What about your horses? Should or shouldn't horses be stabled? If they are stabled, what issues are of major concern to horse owners? Are there risks to stabling a horse? Does the length of time a horse is stabled impact these risks? If so, how do we address and minimize these risks?

There are a number of incorrect precepts regarding placing horses in stalls. This article will dispel these incorrect ideas and aid owners in managing stabled horses. Feeding the stabled horse will be discussed in Part II.

**Why Are Horses Stabled?** Some involuntary situations dictate that horses be stabled. Injured or sick horses often must be stabled for medical treatment. Stallions are usually stabled for management considerations as well as possible legal factors. A contagious disease could require quarantining a horse. A horse owner may also have voluntary reasons for stabling a horse for a short or long period of time. The following classes of horses and/or situations may determine voluntary stabling: show/performance horses, sale horses, broodmares, weanlings, pleasure horses, horses at boarding stables, urban/suburban environments, risk reduction for injuries or disease, inclement weather and isolation.

**Classification of Stabled Horses.** A classification system for stabled horses helps identify and address risk management issues. The major considerations are the number of hours per day a horse is stabled and the duration of the stabled period. Other factors could include individual disposition, management practices, etc.

Category I. Horses are stabled for 20 or more hours out of 24 hours (day) and for long periods of time. This category

includes many show, performance, sale and boarded horses as well as some stallions.

Category II. Horses are stabled 12-20 hours per day for long durations. This category includes some Category I horses, broodmares and weanlings. The major difference between the two is the daily time spent out of the stall for exercise and/or training or just turned-out.

Category III. Horses are stabled less than 12 hours in a day, usually about 8 hours. Many are stabled for periods of shorter duration than Category I and II horses. For example, broodmares and yearlings are often stabled at night in cooler weather and during the day in warm weather.

Category IV. Horses are stabled for shorter periods of time and/or duration. Such horses are often stalled overnight before an event or activity or while eating or being medicated.

Table I. Categories of Stabled Horses

Category	I	II	III	IV
Hours/day	20 or >	12-20	<12	Up to 12
Duration	Long	Long	Long	Short

### **Incorrect Precept #1. Keeping a horse in a stall is an indication that one is a good horse person.**

This is not true. Horses can be properly managed on pasture. There are risks when horses are stabled most of the day and for extended periods of time. Stabling a horse in-and-of itself is not necessarily bad as long as the horse is properly managed to reduce the inherent risks of stabling.

Research indicates that stress is higher in stabled horses than ones on pasture. Horses, by nature, are grazing animals whose primary defense mechanism is "fright-flight."

Placing a horse in a stall could increase its nervousness because it is not able to escape by “flight” if frightened.

In a study, groups of mares were kept on pasture; confined in stalls so they could see, touch and hear each other; or isolated from each other. Stalled mares exhibited more stress than mares on pasture. Confined mares which could see and touch each other were less stressed than those which were isolated. When turned out, confined and isolated mares were more active than pastured mares. It is not known whether horses stabled for an extended time stay stressed or become less stressed as they adapt to the environment.

Management activity can affect a stabled horses' behavior. Management activities, such as feeding, etc., ended about 4 p.m. and rarely went past 5 p.m. on one farm. At another, farm activities often extended past midnight. Mares were managed similarly at both farms.

On the first farm, 80 percent of the mares foaled before midnight while only 36 percent of those on the second farm foaled before midnight. At the second farm, 44 percent of the mares foaled between midnight and 4 a.m. while only 13 percent foaled during this time on the first farm. Disturbing stable activities apparently cause a delay in foaling. Foaling broodmares seem to prefer a quiet environment.

Urine, used for the production of natural estrogen in human medicine, is collected from pregnant mares kept in tie stalls. To study the effects of long-term stabling, seven-month pregnant mares were divided into two groups. One group was kept on pasture and the other in tie stalls for 90-days without exercise. All mares were given an exercise test before and after the study. Length of gestation, time of hard labor and foal birth weights were unaffected by treatment. No dystocias occurred in either group. Heart rates during and after exercise were similar for both groups. Confinement did not appear to affect feeding or reproductive behavior.

### **Incorrect Precept #2. Horses out of the stall for a hour or so daily get adequate exercise.**

A key factor for proper management of stabled horses is adequate exercise. Horses are often placed in a pen while their stalls are mucked-out. This may be their main, or only, daily exercise. Most stabled horses only voluntarily exercise by running and/or playing for a few minutes (5-15 minutes) and then slow to a less active mode.

A study of yearlings demonstrates the importance of adequate exercise. One group of yearlings was housed in box stalls while another was kept on pasture in winter. In the first 84-days, stabled yearlings were walked an hour daily on a mechanical walker while pastured yearlings had free exercise. In a 56-day training period, six yearlings from each group were ridden five days per week. Stabled yearlings were walked one hour daily on non-riding days.

The stabled yearlings had impaired bone growth even though exercised daily. They lost bone mass and had weaker bones. Free exercise by the yearlings on pasture produced sufficient loading or strain to promote normal bone growth and strength. Initial training did not appear to

reduce the negative effects in the stabled yearlings. Pastured yearlings were also easier to ride than stabled yearlings.

Exercise for weanlings is also advantageous. Bone density tended to be greater in exercised vs. non-exercised weanlings. Lameness was not noted in exercised weanlings. Exercised weanlings gained more weight than non-exercised ones.

When, and if, yearlings were exercised appeared to affect their behavior. Yearling geldings were kept in individual stalls and exercised in the morning, afternoon or not at all. A complete pelleted feed was fed in the morning and a pelleted feed plus long-stem hay in the afternoon. Two untreated spruce boards placed in each stall were weighed at the beginning and end of a two-week period.

Non-exercised yearlings chewed 137 grams from the boards in two-weeks. Those exercised in the morning chewed 95 grams, and those exercised in the afternoon, chewed 63 grams. Most wood chewing occurred at night.

Non-exercised yearlings were more bored, as indicated by the wood chewed, than those receiving exercise. Since most wood chewing occurred in the evening, exercising in the afternoon seemed to reduce boredom in yearlings.

Wood chewing at night may also be associated with horses' sleeping habits. Horses sleep only 2 ½ to 5 hours in 24 hours. They sleep in 15 minute cycles, followed by being awake about 45 minutes. Most sleep occurs from 8 p.m. to 5 a.m. with maximum sleep from midnight to 4 a.m. Foals sleep more than mature horses. By seven months of age, a foal's sleep habit is similar to those of a mature horse.

Category I stabled horses must receive regular and adequate exercise to insure health and fitness. Exercise is not an issue in conditioning/training programs where horses perform at high or moderate intensity levels. Horses performing at a low activity level or infrequently may not get adequate exercise except on the days trained or ridden. If horses do not receive exercise that increases the heart rate and maintains it at an elevated rate for a reasonable period of time at least 5 days per week, they may need additional exercise.

Horses stabled most of the time (Category I and II) with limited exercise are at a higher risk of colic and founder. Each owner must determine what level of risk is acceptable and how to manage this risk. Horses on pasture are less likely to colic compared to stabled horses exercised at least once weekly. The major risk of colic occurs when horses are stabled for more than 12 hours per day. Horses in Category I and II need at least 30-60 minutes of exercise 5 days per week.

Category III horses are stabled less and out longer, so risk is lower. They normally do not require forced exercise and require less planned exercise than Category I and II horses.

Category IV horses are normally out on pasture most of the time except when stabled for short periods. Forced exercise is not necessary with these horses unless they move into Category I, II or III.

Horses stabled much of the day for extended periods of

time may develop behavioral problems such as weaving or cribbing due to being confined. Some horses may even become aggressive and a risk to handle. A companion animal may be advisable for horses isolated in a barn without being able to see or hear other horses. Dogs, cats and goats are common companion animals for stabled horses.

**Incorrect Precept #3. Horses must be kept in a heated, tight barn for maximum comfort.**

Horses stalled most of the time, especially for long durations, need a comfortable environment. Stall size is the first consideration. A stall 10 feet by 10 feet is adequate for most horses less than 1,000 to 1,200 pounds. The influence of European Warmbloods results in 1,400 pound light horses. Some broodmares and stallions weigh 1,200 to 1,400 pounds. These horses require a stall 12 feet by 12 feet. Often stallion and foaling stalls will be double: 10 feet by 20 feet or 12 feet x 24 feet.

Bedding is the next consideration relating to a horse's welfare. Bedding provides physical and thermal comfort and should encourage horses to lie down and rest. Bedding materials should be absorbent, keeping the horse dry and the stall environment sanitary. The type and amount of bedding are very important.

Sawdust, shavings and straw are comfortable and commonly used bedding materials. Shredded newspaper is also used but may not be as comfortable. Bedding preferences were reported in the order of straw, shavings and shredded paper. Prior experience with a bedding material did not influence bedding preference.

*Do not use walnut shavings or sawdust which can cause founder.* Softwood sawdust or shavings tend to dry out the hooves. There are practices to add moisture to a horse's hooves. Check wood products for sharp pieces of wood that could injure a horse.

Bedding can contain infectious agents, dust and irritants like ammonia. Some bedding materials are not as comfortable as others. Sand is abrasive and can cause colic if consumed. Sand should only be used as a base under 6 or more inches of sawdust or shavings. Old coarse hay is not comfortable nor recommended as bedding. Rice hulls should not be used as bedding because they may be aspirated into the lungs. Peanut hulls can cause impaction colic if eaten.

While comfort is important, environmental issues such as ammonia and dust are a concern with the stabled horse. Ammonia levels can be very strong and are particularly noticeable in tight, heated show/performance horse barns. Excessively high protein diets contribute to the ammonia problem.

Strong ammonia levels can possibly cause permanent damage to the lungs of foals, impeding their future performance. Ammonia levels as high as 400 parts per million (ppm) have been measured in foal stalls although levels above 10 ppm could cause problems in animals. Ammonia levels were the same with straw, sawdust, sand or shredded paper bedding. In tests, 75 percent of horses kept on 10 inches of straw bedding without any ammonia reducing compounds had inflamed pharynxes, possibly due to

ammonia. Only 25 percent of horses stabled on straw with an ammonia reducing product had inflamed pharynxes.

One to two pounds of hydrated lime reduces the ammonia level when sprinkled on the stall floor after cleaning and before re-bedding. Ammonia levels were noted 48-72 hours after hydrated lime was applied with straw, but not until 72 hours with sawdust.

Ten pounds of dry sodium bisulfate placed on a 10 by 10 stall floor then bedded with 33 pounds of straw lowered ammonia to a non-detectable level. Thereafter, sprinkle dry sodium bisulfate on top of the bedding daily and add 5 pounds of straw. Commercial products have also been shown to effectively reduce ammonia levels in stalls.

The major source of dust in stalls is hay; but bedding is also a factor. A dusty environment results in more respiratory infections. Straw bedding contains higher levels of small, respirable mold spores than wood shavings or paper.

Ventilation is important in warm weather and also in winter in tight, heated barns. Horses produce considerable body heat and exhale a large amount of moisture. When ammonia is a problem, ventilation is even more important.

Proper and frequent mucking-out keeps a stall clean and dry adding to a horse's comfort and health. Category I, II and III horses need their stalls mucked-out daily. Category IV horse stall may be mucked 3-4 times weekly if the stall is clean and dry.

Cleanliness is key in reducing stable fly problems. Flies are annoying, can damage eye tissues and expose horses to pathogens and parasites. Sodium bisulfate reduced ammonia odor and also effectively lowered fly numbers and avoidance actions such as switching tails, head tossing and kicking. Apply about 2.5 pounds of dry sodium bisulfate per stall daily until there is a significant decrease in fly numbers. Then apply as needed.

**Incorrect Precept #4. Stabled horses are healthier.**

Horses on pasture, with adequate shelter and proper feed, are healthier than stabled horses. Health care practices are more critical when horses are stabled with the exception of parasite control. Small strongyle reinfestation in stabled horses is less of a risk than in pastured horses when stalls are properly mucked-out and kept clean. Small strongyle larva do not survive in the dry environment of a stall, and ammonia from urine is toxic to parasite larvae. However, stabled horses should be on a scheduled deworming program from September 1 through March 1 in the Southeastern states.

Other health issues are more intense in stabled horses, especially where several horses are stabled in the same barn and/or horses constantly come and go from a farm. Respiratory diseases are of major concern in these environments.

It is recommended that stabled horses be immunized annually for tetanus, Eastern and Western encephalomyelitis and influenza. If stabled horses are co-mingled with other horses at events/activities or other horses periodically come to the facility, these horses probably need to be re-vaccinated every 90-days for influenza.

Horse owners and their veterinarians need to determine the advisability of vaccinating for West Nile Virus (WNV), strangles, rabies and other diseases with available vaccines. Sanitation and mosquitoes control practices will reduce exposure to mosquitoes, which transmit WNV.

There are situations where stalling a horse is necessary and management intensity increases. Risk management, especially for colic and founder, is greatest for Category I and II stabled horses and higher for Category III horses than for the same horses kept on pasture. By carefully evaluation of factors presented in this discussion, one should be able to manage and enjoy their stabled horse(s) with less risk.

**A list of references will be included with Part II of this article.**



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## Tennessee Horse Express

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