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Anhidrosis

When Your Horse Isn't Cool Anymore

Summertime in the hot and humid South and Gulf states eludes to images of horses lazily swatting flies and hanging out in pastures, their coats glistening in shades darker than usual due to sweating. That statement is true for some of our equine partners. There are many others suffering from the effects of the inability to dissipate heat and cool themselves.

Fifteen to 25% of the horse's body is cooled through respiration and 65-70% is cooled through evaporation of sweat in exercising horses. However, horses that lack the ability to sweat is a condition referred to as anhidrosis. It is almost exclusive to adult horses living in hot, or humid climates. This condition can progress over time or come on quickly, and is characterized as the loss of the ability to sweat and cool the body. Known as a "non-sweater", these horses pose challenges to their owners.



The majority of horses affected by anhidrosis are those exercising and competing. Severely affected horses may not tolerate turnout on hot days; they will stand outside in distress with an extremely high respiratory rate and body temperatures higher than 104 degrees Fahrenheit.¹

The History of Anhidrosis:

First recognized in the 1920's, Anhidrosis affects 2-6% of horses and studies have shown there is no predisposition to age, sex, breed, or color. Adolescent horses are not affected, sedentary horses minimally, but training horses in the southern US are affected by as much as 20%.²⁻⁵ Although the cause of anhidrosis isn't completely understood, it is thought to be caused by a gradual decrease in the secretory response of sweat gland cells to appropriate stimuli. However, some of the causes of anhidrosis can be:

- Hyperkeratinization of sweat gland ducts
- The inability of the sweat gland to respond to adrenaline
- Breakdown of sweat gland
- Protein coding gene impairment
- Atrophy

The Warning Signs of Anhidrosis

A tentative diagnosis of anhidrosis can be made based by your veterinarian on clinical signs. The emphasized should be based on the development of:

1. Increased Body Temperature
2. Increased Heart Rate
3. Labored Breathing & Flared Nostrils
4. Lethargy & Fatigue
5. Collapse



Anhidrotic horses are commonly presented to veterinary practitioners for diagnosis and treatment of respiratory disease.⁴ Both “native” and imported horses can be affected, and gain no advantage from being born into hot climates where anhidrosis is common. In the realm of equine medicine, anhidrosis is a particularly common disorder seen in hot, humid environments irrespective of the region.

Horses with acute onset anhidrosis may demonstrate a partial or complete absence of sweating when exposed to appropriate stimuli. A decrease in the rate of sweating also indicates the possibility of anhidrosis. The sweating rate however, will depend on the intensity of exercise, duration of exercise, and ambient temperature⁷. Horses with long-standing anhidrosis may reveal “dry coat syndrome”, flaky skin, alopecia, lethargy, anorexia, and a decreased water intake. Areas on the body that may retain the ability to sweat include those under the mane, in the saddle and halter areas, between front legs, groin, and under tail.²⁻⁸

The Management of Horses with Anhidrosis:

Moving the horse to a cooler climate is a proven therapy for anhidrosis. Not only does this help manage the high body temperatures, but horses are also noted to start sweating once in a cooler environment. Some horses will get into water sources found in their pastures, such as ponds or big water troughs to cool off. Adding electrolytes or salt mixtures (“Lite salt”) to diets will help them maintain appropriate total body electrolyte concentrations.

Other management tips to consider:

- Make access to fresh, cool water available at all times
- Ride in the early morning or late evening hours to catch cooler times of the day
- Hosing down and sweat scraping, especially neck, legs, and body
- Body clipping the horse



- Night turnout is helpful due to air movement and cooler temps than in stalls
- If stalled, the use of misting fans and cooling the roof of the barn by running water on it
- Provide access to fans, misters or sprinklers
- In an emergency, an alcohol bath will reduce body temperatures
- Consult with your veterinarian to discuss an appropriate treatment plan

Remedies & Treatments:

There are many sources of supplements, liquids and herbal remedies that claim to regain adequate sweating. Many horse owners feel that these supplements offer relief, but this is an unreliable observation with no research support. Other treatments attempted, with minimal results include:

- Acupuncture
- Supplementation with Dark Beer
- Salts and Electrolytes
- Vitamins
- Thyroid Supplementation

Most of these are generally recognized as safe (GRAS), but also do not appear to improve the animal's ability to sweat. Attempts through medical

treatment such as ACTH, alpha-2 agonists, prostaglandins (Lutalyse), antihistamines and Methyldopa (Aldo-Met), have generally been unsuccessful.¹⁰



Be aware of your horse under hot and humid conditions, and watch for signs of heat distress. There is no evidence of high protein or molasses rich feeds causing a horse to become a non-sweater. Currently, the manifestation of the halt or resumption of sweating has no clear reasoning or answers as to why. What we do know for a fact, is that research is ongoing to find answers to the causes of anhidrosis and effective treatment methods that will bring relief to many horses, and their owners. Until then, the best management option is to treat the symptoms, making your horse more comfortable during those summer months.



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