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What is equine anhidrosis or nonsweating?

A reduced or complete inability to sweat in response to appropriate stimuli in horses is called equine anhidrosis. This condition can affect horses that are native to or are imported to hot, humid climates much like the southern United States, particularly along the Gulf Coast.

Evaporation of sweat is important to cool the body's temperature and is affected by many environmental factors such as air movement, temperature, and humidity as well as physiological factors of the horse, including their large body volume-skin surface area and their preferential direction of blood flow to the heart and lungs during strenuous exercise with little blood flow directed to the skin. Evaporation of sweat allows the body temperature to be reduced to normal limits within 30 minutes after strenuous exercise. If this mechanism is lost and the body temperature remains elevated after strenuous exercise for an extended period of time, this can result in heat stress to the animal.

Signs that your horse may be losing the ability to sweat include a lack of sweat accumulation along the neck, chest, and rump along with an increased respiratory rate. The horse uses its lungs as another important, but minor cooling mechanism. Therefore one of the first signs often times is an increased respiratory rate or nostril flare at rest along with increased respiratory rates during exercise that persist for longer than normal after cessation of exercise. In fact, sometimes these horses present to the veterinarian for respiratory problems prior to identifying the inability to sweat. Horses may become anhidrotic but retain the ability to sweat in certain areas such as under the jaw, base of the ears, between the hind legs, under the saddle area, and along the neck underneath the mane. In longer standing conditions the hair coat will become dull, dry, and scruffy with or without hair loss. These signs can have a gradual or abrupt onset.

The diagnosis is typically confirmed based on clinical signs, but there are semi-quantitative tests that can be performed by injecting varying dilutions of stimulants into the skin and evaluating the skin for sweat production.

There is no proven treatment for anhidrosis. Management changes that can be instituted primarily focus on climatic control. The most extreme management practice would be removal of the horse from the hot, humid climate to a cooler, drier climate. Many horses will respond to this climatic change and begin sweating within 30 days of moving provided that the inability to sweat has not been long standing (>2-3 years in duration). If relocating the horse is not an option, then management changes such as keeping the horse in an air-conditioned stall, providing cool misting fans, reducing work intensity and/or working the horse during cooler times of the day should be practiced. Another management strategy related to feed intake is to minimize grain intake and feed only grains low in protein so that the basal metabolism of the horse is reduced. Varying success has been achieved with medical therapies aimed at stimulating the sweat glands secretory capacity including feed supplementation with potassium using lite salt, tyrosine (One

AC), Methyl Dopa, levo-thyroxine, and clenbuterol. Alternative therapies including acupuncture have also proven to offer varying success.

The only prevention for anhidrosis is avoidance of hot, humid climates, which is not an option for many. Therefore it is important to be cognizant of the environmental temperature and humidity when working your horse. Try to work them in the cooler times of the day when a strenuous training session is warranted and cool them off quickly to avoid any problems.

Answered By: [Lindsey Boone, DVM, PhD, DACVS-LA](#)