Cool ideas for a hot topic

Methods can vary for treatment of tendons and ligaments in legs after exercise. The long, hot days of August are here, and staying cool is just about to become a necessity. The equine portion of the Olympics was held in Hong Kong this month, and 30° temperatures and more than 80% humidity of that region were concerns for competitors and organizers alike. Thus, keeping horses cool is a hot topic.

Recent research has provided a new look at cooling, specifically cooling of tendons and ligaments after exercise. Over the last few years, many cooling products, leg-soaking systems, and cold-application technologies have become available for this purpose, but research had not yet fully evaluated these options. Owners and trainers could not be sure if cold-foaming solutions were on par with a new circulating cooling machines and high-tech wraps and boots. A review of the benefits of the ancient idea of applying cold to tendons and ligaments and a look at emerging research on how best to do this will provide horsemen with the both the "cold" and the "new" on this hot topic.

Tried and true

The idea of applying cold (water, ice, snow) as a means of controlling pain and inflammation has been around for a very long time. Greek and Roman physicians discussed cold therapy or cryotherapy as early as the 4th century B.C. There are numerous early reports of applying cold compounds such as ice or cold mud to the legs of horses suffering from tendons and ligament inflammation. And of standing horses with various inflammatory conditions of the feet (abcesses, arthritis, and laminitis) in a cold stream or pond. Science has since confirmed that cryotherapy is a very beneficial method of treatment.

The primary benefit of cold application is in reducing inflammation. This effect is thought to occur through local vasoconstriction. This reduction in size of blood vessels helps to reduce fluid leakage into tissue, which results in hemor- rhage or edema. Normal hard exercise can stress and strain tendons and ligaments, and any abnormal conditions leading to sprains, tissue disruption, or muscle/tendon damage (tears) will certainly be associated with more substantial inflammation and swelling. Reducing whatever swelling or edema occurs following exercise in working tendons and ligaments is important for both the horses' comfort and the initiation of cold therapy is asso- ciated with a faster resolution of problems.

When to use

Cold therapy should be started as soon as possible after exercise and certainly should be applied immediately following trauma. Studies show that a difference in only one day in the initiation of cold therapy is associated with a longer course of treatment and a slower resolution of problems. In sound, healthy horses, immediate post-exercise cold therapy helps in the cooling-out process, and its rapid use may reduce potential stiffness or swelling.

Research at the Royal Veterinary College in the United Kingdom has shown that as little as seven minutes of strenuous exercise can produce temperatures of 113° in tendons and ligaments. The rapid cooling of these tissues becomes very important in the long-term health of these structures, and information on the best methods of cooling in the horse is necessary for owners and trainers.

Current methods of cooling a horse’s tendons and ligaments vary from the simple to the complex.

The health of the owner or trainer Eoin Harty, a fourth generation horse- man who was instrumental in the development of the Dubai World Cup (UAE), winner Street Cry (Ire) and champion Tempera and current conditioner of Grade 1 winner Colonel John, said "old school is still the way to go."

Harty stands his runners in buckets of water and crushed ice for an hour post race. "It takes time and patience to get some of them to accept it," Harty said.

Kentucky-based trainer Ken McPeek, trainer of 2002 Belmont Stakes (GI) winner Sarava, also prefers a simple approach. McPeek uses cold water bandages and ice boots with crushed ice im- mediately following a race. He im- states that "old school is still the way to go."

Scientific proof

While these cooling approaches certainly represent currently ac- cepted practices, what does science have to say about the different methods of cold application and the newer products on the market? There is very little convincing re- search on the pros and cons of vari- ous methods of equine cold application. No matter what the method of applica- tion, there appears to be little information available as to the ef- fects, efficacy, length of therapy, and best method of application in the horse," said California-based practi- tioner Daniel Ramirez, D.V.M.

Researching this lack of equine-specific information has prompted a number of researchers to begin testing some of the available cold therapies.

Researchers at the School of Vet- erinary Medicine at the University of California-Davis investigated the degree and rate of cooling of ten- dons using a commercial compres- sion splint/wrap with circulating coolant. These systems involve wrap- ping the horse’s legs with a splint material that is connected by tubes to a central machine. The material provides compression and circula- tion.

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