



PREVENTING RECURRENT EXERTIONAL RHABDOMYOLYSIS

Recurrent Exertional Rhabdomyolysis (RER) is a chronic, debilitating condition that can shatter all of your hopes for your competition or racehorse. Fortunately, you can take preventative measures to help your horse transcend the odds and perform at its full potential.

Although your horse may appear to be in excellent physical condition, very soon into exercise, he shows signs of discomfort and muscle stiffness, sometimes accompanied by profuse sweating. If your horse is Thoroughbred, Standardbred or Arabian, it is likely suffering from RER, better known as tying up, the generic term used to describe the incidence of hard and painful muscles during equine exercise.

WHAT IS RER?

Not to be confused with Polysaccharide Storage Myopathy (PSSM), a different form of tying up, Recurrent Exertional Rhabdomyolysis is explained by **an inability to regulate fluctuating calcium ions within skeletal muscle cells**. Quite simply, the endoplasmic reticulum, an intercellular vacuole containing calcium, releases more of the mineral than it is able to reabsorb. This excess excitability of the endoplasmic reticulum causes certain muscle fibres to remain permanently contracted, generating the typical clinical symptoms of RER. The following list describes RER's clinical signs, which may vary in intensity:

- exercise intolerance
- stiff gait
- high pulse and respiratory rate
- profuse sweating
- muscle stiffness
- muscle pain
- trembling
- refusal to move forwards
- myoglobinuria

RER is most common in physically fit and talented horses who possess a nervous or excitable temperament. Episodes of RER often seem to be provoked by a stimulating or stress-inducing event.

Thoroughbreds have the highest predisposition to RER, particularly fillies in training. That said, the syndrome also affects Standardbreds and Arabians, and to a lesser extent, Warmbloods. In racing Thoroughbreds, RER episodes tend to arise during training after the jockey has pulled back on the reins to slow down the horse or halt its gallop.

The most recent research suggests that chronic rhabdomyolysis, including RER, has genetic causes, though at this point, there is no test to confirm this. For the most part, diagnosing RER depends on analyzing each horse's history, clinical symptoms and blood levels of certain proteins including CK and AST.

SIMPLE PREVENTION METHODS

Multiple preventative approaches need to be put into place to reduce the incidence of RER episodes. The stabled horse's environment, its training program and food ration must become daily priorities for the horse owner or caregiver. The right medication at the right time can also help manage the condition. Your equine veterinarian will be able to prescribe the most suitable medication for your horse.

- **Environment**

Horses who are at risk of developing RER must absolutely be kept in a calm, familiar environment. To reduce all unnecessary stress, it is useful to maintain as much of a routine as is feasible. Whenever possible, allow the horse to keep the same stall and stable neighbours, and ensure that its outdoor companions remain consistent. We strongly recommend daily outings, during which your horse can relax and run free in its "very own" paddock. Such outings are as beneficial to the horse's physical health as they are to its mental well-being.

- **Exercise**

In addition to free time outside, horses afflicted with RER require daily exercise sessions. Days without training need to be kept to a minimum. It is important to adapt the training program so that it allows the horse to remain as relaxed and calm as possible. Exercise should be interspersed with periods of relaxation. Be sure to also include an adequate warm-up period and active recovery phase.

- **Food**

Because a horse's food ration plays an extremely important role in RER episodes, we must monitor nutrition very strictly. A horse's temperament seems to have a direct impact on incidences of tying up, and the muscle damage that follows. For this reason, we must ensure that the ration does not exacerbate a horse's excitability, in part by minimizing carbohydrate intake (sugars and starches). A diet high in plant-based oils and digestible fibres will help compensate for the ration's lack of carbohydrates and provide the horse with enough calories for its activity level. That said, do not reduce the ration's starch levels too drastically; starch remains essential to maintaining the correct levels of muscle glycogen, which the horse requires for performance.

Since RER causes significant oxidative damage, it is imperative that the horse's ration be complete and balanced at all levels, and that it includes vitamins and minerals. Once you have established nutritional balance, a crisis may still call for increased supplementation of vitamin E and selenium. These two powerful antioxidants will help to minimize damage in case of a RER episode.

As a final point, your horse requires a minimum of 60 g of salt per day, available in the form of salt blocks or granulated salts. Serving salt at each meal will promote water consumption and help to prevent the excitability that is sometimes caused by dehydration. On hot and humid days, it is also a good idea to incorporate sufficient quantities of commercial electrolytes.

PURINA'S ADVICE

Purina has two specialized feeds geared towards horses affected by RER: **Equilibrium Trimax** and **Equilibrium Integri-T**. Ideally, the quantity of feed should be divided into several small meals per day.

- **Equilibrium Trimax:** Made up of 12% plant-based oils, and high in digestible fibres (beet pulp), this feed meets all the needs of your racing, competitive or performance horse. Its reduced carbohydrate content (sugars and starches) still allows for the replenishment of muscle glycogen levels.

- **Equilibrium Integri-T:** This feed boasts one of the lowest starch and sugar levels on the market, perfect for the RER afflicted horse with lower energy requirements. Consisting of 6% plant-based oils and high in digestible fibres (soybean hulls and beet pulp), **Equilibrium Integri-T** offers the optimal number of effective calories.