



VET NOTES

OCTOBER 2009

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- May 2009 - Equine cardiology
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Tying-up Syndrome

Recurrent exertional rhabdomyolysis (RER) or tying-up syndrome is a general description of horses that exhibit stiffness and painful muscle contractions during or following exercise. In severe cases they may have difficulty moving their hind legs, and often have very dark urine. Blood serum elevation of creatine kinase (CK) is a primary diagnostic tool.

Treatment of RER has been varied, and often not satisfactory. These treatments have included vitamin E with selenium, supplements, electrolytes, Dantrolene administration, and changes in training routines. RER is seen primarily in Thoroughbreds, Standardbreds and Arabians. It is caused by altered muscle contraction and relaxation due to abnormal regulation of intracellular calcium, independent of dietary calcium. It is no longer thought to be caused by lactic acid build up in muscle.

RER is not the same disease as polysaccharide storage myopathy (PSSM) seen in quarter horses and heavier breeds. However, the signs are similar and they are probably both inheritable.

RER is seen primarily in young horses in some form of training program, 65% of them are fillies, 48% are excitable, and most are being fed more than ten pounds of sweet feed per day.

RER and PSSM respond satisfactorily to change in diet. These horses should be fed a well balanced diet that includes all the normal vitamins, minerals and electrolytes. In addition, current research indicates that replacing the starch (sugar) in the diet with fat as the energy source will significantly reduce the incidence of this disease. Fat is thought to remove the starch influencer in excitability, thus removing the major trig-

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ger factor in tying-up. Fat also depresses the serum CK activity.

Recommended diets should be low starch (carbohydrates), high fat and high fiber. The diet should include high quality grass hay with little or no alfalfa. Low starch feeds have less than 9% starch by weight. High fat feeds are greater than 5% fat by weight and may be up to 12%. High fiber levels should be greater than 20%. Fat can be added to the diet by supplementing corn oil or rice bran. There are also commercially available low starch, high fat diets now available from many different feed companies.

Management of a horse suffering from tying-up syndrome should include a standardized daily routine, minimization of environmental excitement and regular exercise. However, the most important and often most overlooked factor is diet.

- January 2008 - Proximal hind limb suspensory desmitis: (PSD): Part II: Treatment
- December 2007 - Pleuropneumonia - when shipping fever turns into a nightmare
- November 2007 - Proximal hind limb suspensory desmitis (PSD): Part I: Diagnosis
- August 2007 - Intramuscular injections
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- April 2007 - The advantages of high fat/low carb diets
- March 2007 - Bandaging
- February 2007 - Single screw compression V. Screws and wire (Transphyseal bridging)

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