Effects of Athletic Conditioning on Horses Affected With Degenerative Suspensory Ligament Desmitis

Lin Xie, BS

Signs of degenerative suspensory ligament desmitis are ameliorated by athletic conditioning and may be related to equine metabolic syndrome. Author's address: Louisiana State University, Veterinary Clinical Sciences, Skip Bertman Drive, Baton Rouge, Louisiana 70802; e-mail: lnxie@vetmed.lsu.edu. © 2009 AAEP.

1. Introduction
Degenerative suspensory ligament desmitis (DSLD) is characterized by progressive degeneration of the suspensory ligament, fetlock hyperdorsiflexion, and lameness. The hypotheses tested in this study were that signs of minor to moderate DSLD are reduced with athletic conditioning, and there is a potential relationship between equine metabolic syndrome (EMS) and DSLD.

2. Materials and Methods
Six horses (n = 2/normal; 4/DSLD) were exercised on a treadmill for 30 min every other day for 8 wk. At the end of the exercise trial, horses were pasture rested for 4 mo. Kinetic and kinematic gait analysis, distal limb radiographs, suspensory apparatus ultrasound, and blood collection were performed before the exercise trial, after 4 and 8 wk of exercise, and after 4 mo of pasture rest after the exercise trial.

3. Results
Vertical impulse was significantly increased after 8 wk of exercise and 4 mo of pasture rest compared with baseline in DSLD horses. Improvements in ligament structure were visible with ultrasound in affected horses over the course of the study. Serum insulin and glucose values improved from baseline in all horses after 4 and 8 wk of exercise.

4. Discussion
The results of this study show that some signs of DSLD are reduced with athletic conditioning and that the changes are maintained for a period of time after consistent exercise has ceased. DSLD and EMS may be co-morbid conditions. Further research is necessary to characterize the potential relationship.