



## **Kentucky Equine Research Technical Bulletin**

# **Effect of Triacton™ Supplement on Bone Density in Thoroughbred Racehorses**

### **Introduction**

Bone quality is important for the long-term health and soundness of performance horses. In racehorses, insufficient bone density can result in bucked shins, an important cause of lost training time and reduced starts, as well as other developmental issues.

Researchers have previously identified several minerals with positive effects on bone density when supplemented beyond a traditionally fortified diet. In an effort to optimize this effect, Kentucky Equine Research (KER) designed a unique blend of high-quality ingredients which had individually been shown to play a role in bone development.

To test the efficacy of this blend for improving bone density and digestive health in Thoroughbred racehorses in active training, KER researchers conducted the following study.

### **Horses Studied**

Thirteen Thoroughbred racehorses in training in Ocala, Florida, were studied from December 2016 to March 2017 (90 days). The average age of the horses was  $3.1 \pm 0.4$  years. Horses consisted of two- and three-year-olds that were beginning race training, three-year-olds in active race training, and older horses returning to training after a 60- to 90-day break from active training.

### **Dietary Treatments**

Horses were fed timothy hay and concentrate at levels to maintain body weight throughout the study. Seven horses received 120 g/d of Triacton supplement, and seven horses received 120 g/day of a placebo pellet.

The horses were paired by age and exercise intensity and then randomly assigned to treatments. One horse from the placebo group was removed from the study because of lameness unrelated to bone development and has not been included in study results. There was no difference in average age between the two groups.

### Training Intensity

Training consisted of jogging, galloping, and breezing. Figure 1 shows the average total distance trained by the horses at different gaits in each treatment group during the 90-day study. There was no difference in training intensity or duration between the two treatment groups.

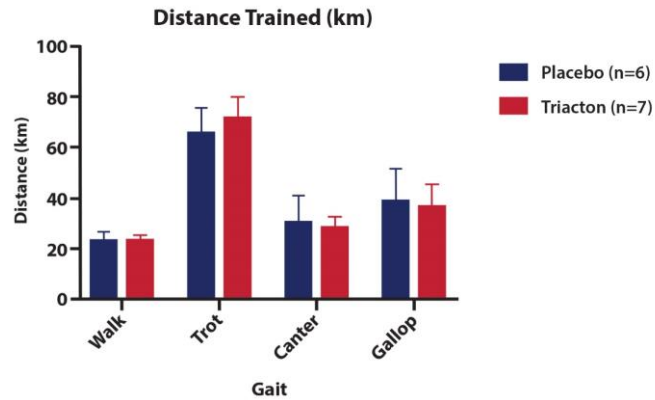
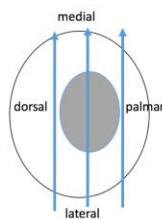


Figure 1. Average distance trained by horses at different gaits.

### Measurements

Radiographs of the left front cannon bone from dorsal-palmar and lateral-medial views were taken at 0, 30, 60, and 90 days of the study. An aluminum step-wedge was placed in plane with the cannon bone to use as an external measure of bone density. The density of the lateral, medial, dorsal, and palmar cortices of the cannon bone were measured. Additionally, the thickness of each cortex and the overall thickness of the cannon bone were measured.



LM view



Left cannon bone

## Results

Over the 90-day training period, the horses supplemented with Triacton had significantly greater increases in both dorsal (Figure 2) and palmar (Figure 3) cortical bone density compared to the horses that received the placebo ( $p < .05$ ). Specifically, horses receiving 120 grams of Triacton per day had a threefold greater increase in bone density in the dorsal cortex (shin) of the cannon bone compared to a placebo.

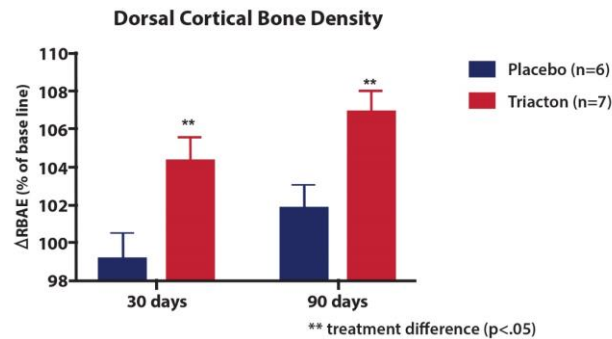


Figure 2. Change in dorsal cortical bone density.

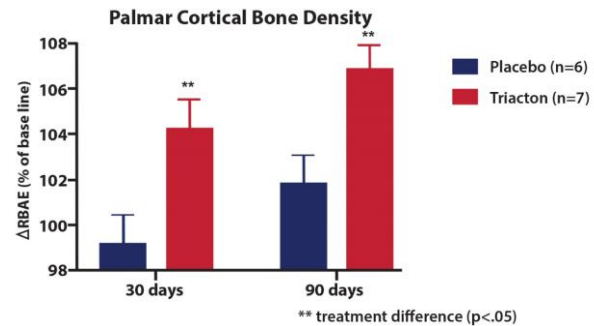


Figure 3. Change in palmar cortical bone density.

## Triacton Supplementation for Bone Density

Increasing bone density in young horses with Triacton supports skeletal soundness and helps stave off damages caused by intense training programs, which may include bucked shins. Triacton is a pelleted, palatable supplement designed to be fed twice a day.

In addition to its bone-building properties, Triacton supports the health of the gastrointestinal tract through its buffering mechanisms, reducing the occurrence of gastric ulcers and hindgut acidosis.

For more information on Triacton, contact Kentucky Equine Research at 888-873-1988 or [info@ker.com](mailto:info@ker.com). Purchase Triacton at [shop.kerx.com](http://shop.kerx.com).