

3375 ANTIOXIDANT AND BEHAVIORAL EFFECTS OF CANINE HEALTH SUPPLEMENT IN DOGS

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Abstract (922.12)

OBJECTIVE: To evaluate the antioxidant effects of an herbal dietary supplement blend (LifeVantage® Canine Health) on markers of oxidative stress and owner perception of pet behavior.

METHODS: Eighty dogs were followed for 60-days in a double-blind, placebo-controlled prospective study. Owners were required to sign an informed consent to participate in the study. Dogs were randomized into Canine Health supplement (CH; n=40) or Placebo (P; n=40) administered once daily. CH is a chewable flavored tablet containing an antioxidant herbal blend (Milk Thistle, Bacopa, Ashwagandha, Green Tea, and Turmeric), plus fish oil and type II collagen. The matching placebo was a look/taste-alike product without the active ingredients. Thiobarbituric Acid Reactive Substances (TBARS) and Catalase were analyzed before and after supplementation. Owners completed a questionnaire assessing disability, cognition, energy level, social behavior, and skin/coat quality (Function Score; FS).

RESULTS: Seventy-six dogs completed the study (Avg. 8.6 years old and 54lbs BW). Catalase was increased by 21% in CH, compared to an 11% decrease in P (32% difference between groups). TBARS decreased but the difference was not statistically different between the 2 groups. FS improved significantly in CH within 30 days, with no change in P. Cognitive function trended towards improvement in CH, while decreasing in P.

CONCLUSIONS: Dietary supplementation of dogs for 60-days with Canine Health resulted in a significant improvement in overall owner perception of pet behavior, as well as notable trends for an increase in catalase, a reduction in TBARS, and improved cognitive function. These results demonstrate an important wellness benefit of reducing oxidative stress in dogs.

Introduction

Oxidative stress is a condition in which free radicals and other chemically reactive molecules known as reactive oxygen species (ROS) overwhelm a biological system's antioxidant defenses, and damage important cellular components including protein, DNA, and lipids. ROS are produced naturally inside the body during metabolism, inflammation, and other normal processes, and can also come from outside the body due to environmental exposures. Fortunately, the body has powerful defense mechanisms to limit the damage caused by ROS, including catalase, superoxide dismutase, and glutathione-related enzymes.

Like people, dogs are also exposed to oxidative stress and use a network of antioxidant enzymes as a defense mechanism. So LifeVantage formulated a supplement for dogs called Canine Health, which is designed to combat oxidative stress in dogs through Nrf2 activation like Protandim® combats cellular stress in humans. In addition, Canine Health is formulated to support joint function, mobility, flexibility, and cognitive function in dogs.

Methods

In a double-blind placebo-controlled prospective study, 80 dogs were followed for 60-days. Owners signed an informed consent to have their dogs participate in the study. Dogs were randomized into either a treatment group that consisted of chewable tablet (CH; n=40) or into a placebo group (P; n=40). Each treatment was administered once daily. CH is a chewable flavored tablet containing an antioxidant herbal blend (Milk Thistle, Bacopa, Ashwagandha, Green Tea, and Turmeric), plus fish oil and type II collagen. The matching placebo was a look/taste-alike product without the active ingredients. Thiobarbituric Acid Reactive Substances (TBARS) and Catalase were analyzed before and after supplementation. Owners rated their dog's physical ability on a 10-dimension questionnaire on a 0 to 3 scale (0: easy, no problem; 3: very difficult, may not do). The total score (FS score) was taken at days 1 and 60. Owners also graded dog's social behavior, cognition, energy level, and skin/coat quality. Within each group, a veterinarian evaluate each dog and assigned them a disability rank based on lameness, pain and range of motion. In a separate case control dog performance study, a single dog was evaluated in a physical exertion test, utilizing a measured course Frisbee retrieval challenge. The dog was supplement with one CH chewable per day. The Frisbee retrieval challenge was done at day 0, 7, 21 and 28 days. The running speed and number of repetitions were measured until "Rowdy" demonstrated a change of gait (Lameness).

Results

Seventy-five dogs completed the study (Avg. 8.6 years old and 54 lbs BW). Thirteen dogs in the CH group and seventeen in the placebo groups were found to have some form of physical impairment. Mean FS scores significantly decreased in dogs that received CH and classified as having some initial physical impairment. (Fig. 1) Catalase was increased by 36% in CH (n=36), compared to an 11% decrease in P (n=39) (47% difference between groups) (Fig. 2). There was a trend towards statistical significance. TBARS decreased but the difference was not statistically different between the 2 groups. Cognitive function trended towards improvement in CH, while decreasing in P. CH was very well tolerated with no adverse reactions.

Fig. 1: Change in FS Score (CH: n=13; P: n=17)

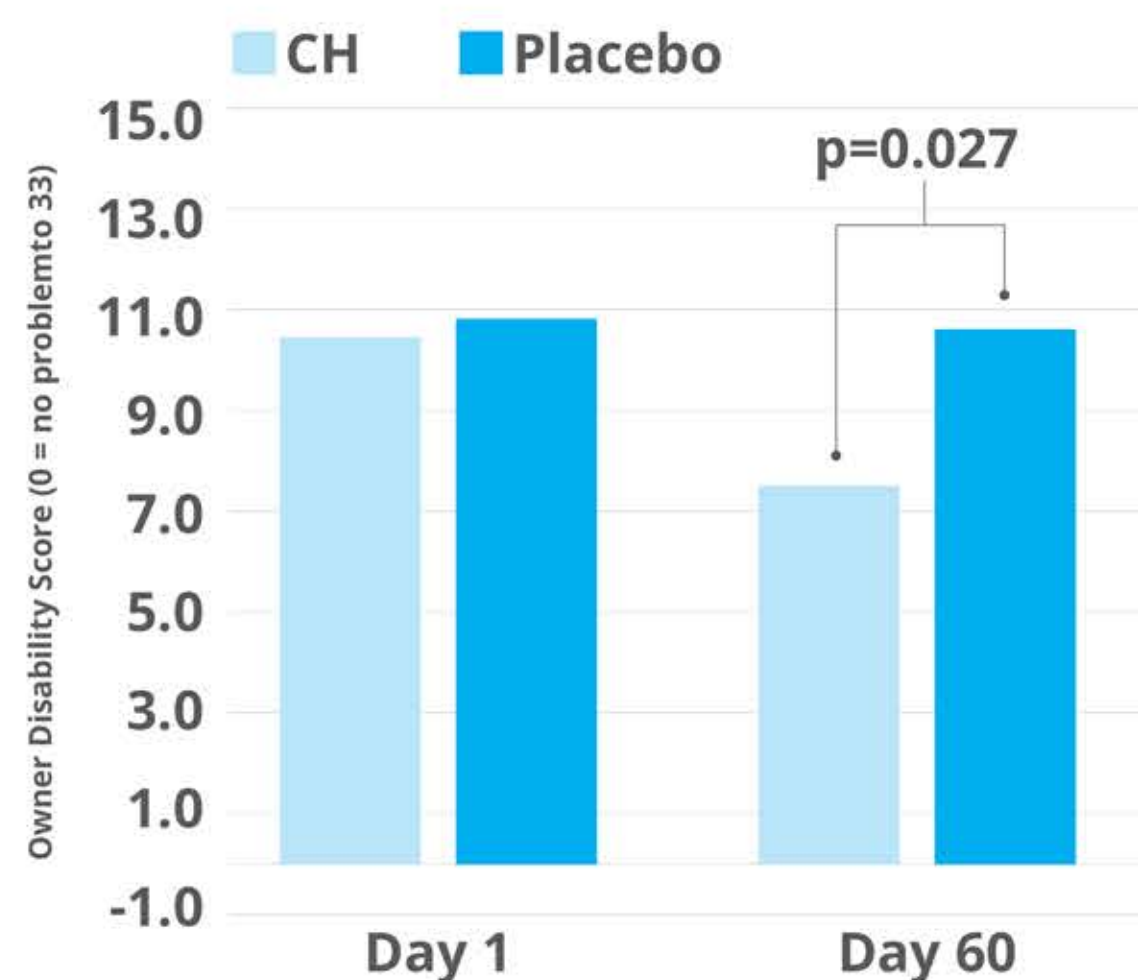
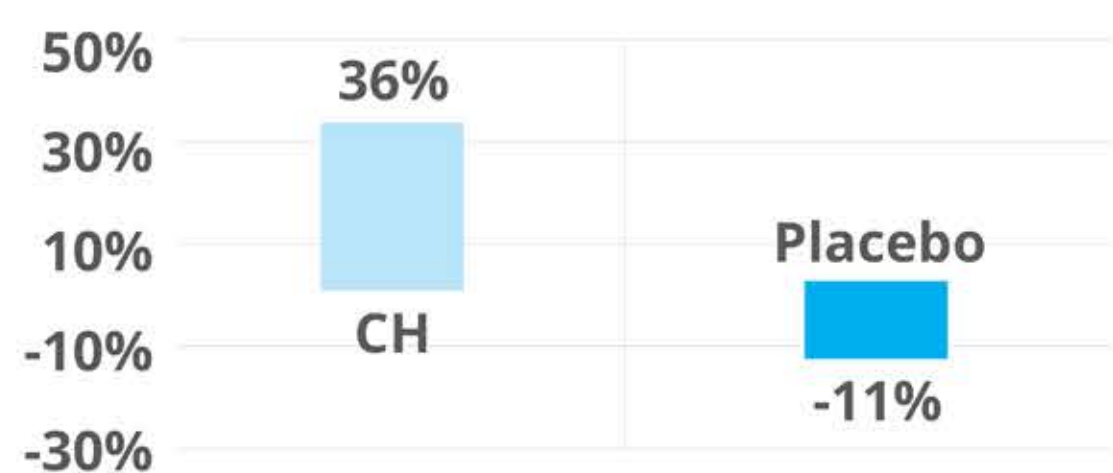


Fig. 2: % Catalase change (baseline to Day 60)

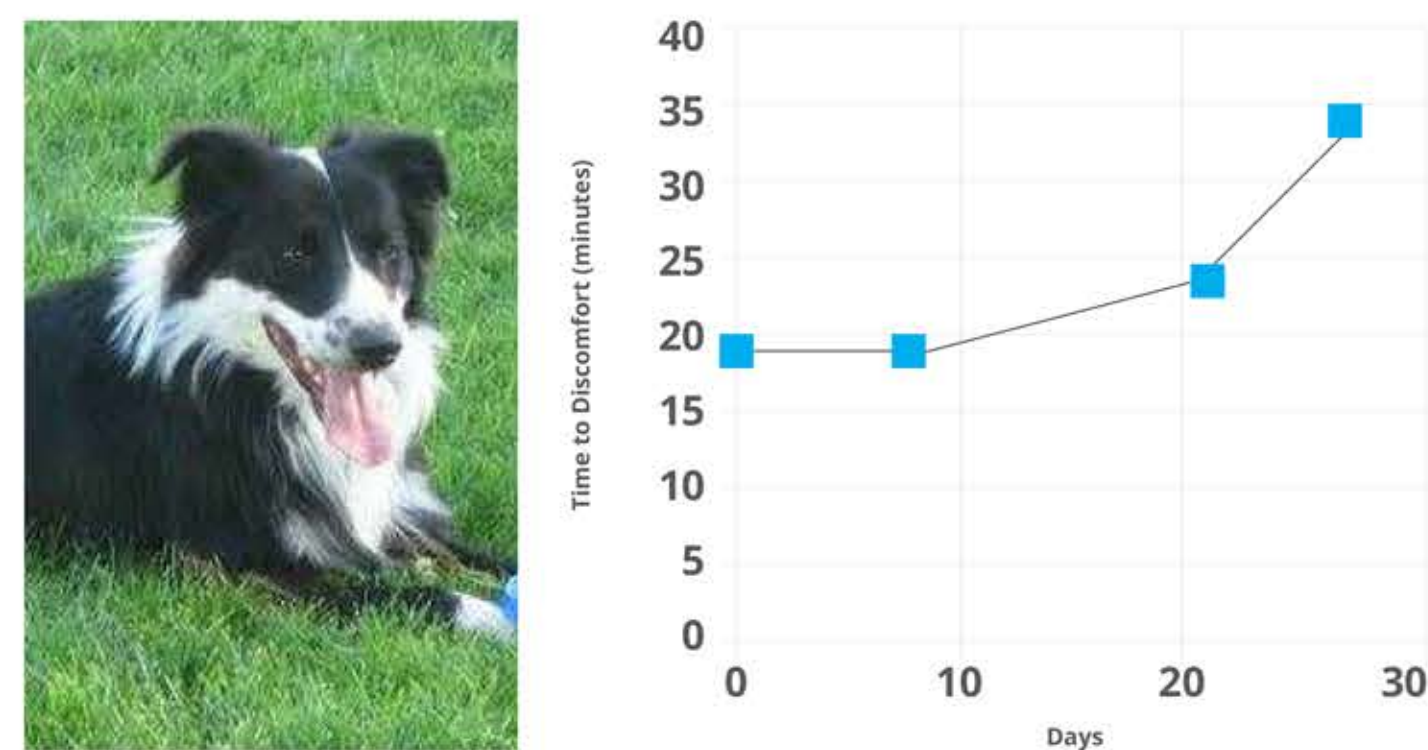


In the Frisbee challenge, "Rowdy" exhibited a significantly longer period of exercise after being given CH for 25 days. The number of retrieval, speed, distance and time to visible gait changes increased overtime with the daily supplementation. (Table 1) (Fig. 3)

Table 1: Dog Performance

| | Day 0 | Day 25 | Improvement |
|----------------|-------|--------|---------------------------------------|
| # Throws | 88 | 177 | Over twice the amount of throws |
| Distance | 8800 | 17700 | Twice the distance covered |
| Duration (min) | 18.5 | 33.8 | 1.82 times longer time to gait change |

Fig. 3: Time to Gait Change



Conclusions

Dietary supplementation of dogs for 60-days with Canine Health resulted in a significant improvement in overall owner perception of pet behavior, as well as notable trends for an increase in catalase and improved cognitive function. This was confirmed in a simple case controlled study where the supplemented dog significantly improved his physical performance. These results demonstrate an important wellness benefit of reducing cellular stress in dogs.