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NUTRICIÓN

BODY COMPOSITION AND CARTILAGE BIOMARKERS ARE AFFECTED BY DIET IN GROWING LARGE BREED DOGS

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Comunicación

Objectives of the study

The purpose of this study was to describe cartilage and bone biochemical markers and body composition in growing large breed dogs and to determine if these measurements are affected by diets of similar caloric density but differing composition.

Material and Methods

A prospective blinded study was performed using 43 large-breed puppies (Golden and Labrador Retrievers). Dogs were randomly assigned to one of two diets from 2-18 months of age. DEXA was performed at ages 2, 5, 12 and 18 months. Blood was analyzed at 2, 3, 5, 12 and 18 months for complete blood count, serum chemistry profile, taurine, vitamin E, fatty acids, glutathione peroxidase, CPII, COMP, CTXII, BAP, OC, ghrelin and growth hormone.

Results

Blood parameters for nutrients largely reflected the composition of the diet. Dogs fed a diet higher in protein, calcium, omega 3 fatty acids and antioxidants had less percent body fat and greater percent lean body mass at 5, 12 and 18 months and a higher CPII: CTXII ratio and lower COMP at 18 months of age. BAP, OC and

CTXII declined with age whereas COMP and CPII were similar at all time points for both diets.

Conclusions

The results of this study demonstrate that BAP, OC and CTXII concentration is greater in growing puppies than in mature dogs. A diet proportionately higher in protein, calcium, omega 3 fatty acids and antioxidants improves lean body mass and may positively impact cartilage turnover as maturity is attained. The rate of cartilage turnover during growth may ultimately impact development of orthopedic disease or arthritis in adulthood.

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