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Lifelong diet restriction and radiographic evidence of osteoarthritis of the hip joint in dogs.

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Abstract

OBJECTIVE:

To evaluate the effects of diet restriction on development of radiographic evidence of hip joint osteoarthritis in dogs.

DESIGN:

Longitudinal cohort study.

ANIMALS:

48 Labrador Retrievers from 7 litters.

PROCEDURES:

Forty-eight 6-week-old puppies from 7 litters were paired with littermates by sex and weight, and each pairmate was randomly assigned to 1 of 2 groups of 24 dogs each. Starting at 8 weeks of age, 1 group was fed ad libitum (control fed) and the other was fed 25% less (restricted fed) of the same diet for life on a pairwise basis. The dogs' hip joints were radiographed in the standard ventrodorsal hip-extended view at multiple intervals prior to 1 year of age and at annual intervals thereafter on the basis of birth anniversary. A board-certified radiologist unaware of group assignment scored the radiographs for evidence of osteoarthritis.

RESULTS:

Prevalence of radiographic evidence of hip joint osteoarthritis in all dogs increased linearly throughout the study, from an overall prevalence of 15% at 2 years to 67% by 14 years. Restricted-fed dogs had lower prevalence and later onset of hip joint osteoarthritis. Median age at first identification of radiographic evidence of hip joint osteoarthritis was significantly lower in the control-fed group (6 years), compared with the restricted-fed group (12 years).

CONCLUSIONS AND CLINICAL RELEVANCE:

Restricted feeding delayed or prevented development of radiographic signs of hip joint osteoarthritis in this cohort of Labrador Retrievers. Lifetime maintenance of 25% diet restriction delayed onset and reduced severity of hip joint osteoarthritis, thus favorably affecting both duration and quality of life. In addition, the data indicated that development of hip joint osteoarthritis was not bimodal in these dogs but occurred as a continuum throughout life.

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