

A Number of Environmental Factors Can Affect the Incidence of Hip Dysplasia in Dogs

Mar. 26, 2012 — Hip dysplasia (HD) in dogs is affected to a larger degree than previously believed by the environment in which puppies grow up. It is particularly during the period from birth to three months that various environmental factors appear to influence the development of this disease. During the puppy stage, preventive measures can therefore be recommended with a view to giving dogs disposed to the condition a better quality of life.

Randi I. Krontveit's doctoral research has studied the incidence of HD in four breeds of dog in Norway and examined factors in the environment where the dogs grew up that can have an affect on the number of cases. HD is a genetic disease which also occurs in several other species.

Dogs are not born with HD, but genetically disposed

puppies can develop varying degrees of HD. The degree of HD has an affect on when the dogs show symptoms and on how long they live.

Five hundred privately owned dogs participated in the study and the four breeds investigated were the Newfoundland, the Labrador Retriever, the Leonberger and the Irish Wolfhound. The environment in which the dogs were born and grew up was registered by means of questionnaires filled out by the breeder and the new owner, and by examinations carried out by veterinary surgeons.

Findings from previous experiments and studies from other countries have indicated that rapid growth and a high body weight are factors that increase the likelihood of developing HD. Randi I. Krontveit's research has shown that rapid growth and high body weight in the first year of the puppies' life did not result in an increased risk of HD. On the contrary, she found that the breed that had the slowest growth rate -- the Newfoundland -- had the highest incidence of HD (36%). The Irish Wolfhound had the lowest incidence of HD (10%), yet had the fastest rate of growth.

Puppies usually live with their mother at the breeder's for the first eight weeks of their life. Several factors related to the living conditions at the breeder's were shown to have an influence on the incidence of HD. Puppies born in the spring or summer and at breeders who lived on a farm or small holding, had a lower risk of developing HD. After about eight weeks, the puppies began life with their new owner. The opportunity to exercise daily in parks up until the age of three months reduced the risk of HD, whereas the daily use of steps during the same period



Dogs playing. (Credit: Image courtesy of Norwegian School of Veterinary Science)

increased the risk. Overall, it would appear that daily exercise out in gently undulating terrain up until the age of three months gives a good prognosis when it comes to preventing HD.

The dogs in this study were followed up until they reached 10 years of age by means of annual questionnaires filled out by the owner. Dogs seriously affected by HD were put down earlier than dogs with a milder form of the disease. This was particularly the case for Newfoundlands and Leonbergers. HD did not have such a large affect on the longevity of Labrador Retrievers or Irish Wolfhounds. Serious and moderate degrees of HD increased the risk of symptoms such as limping and hip pain and these symptoms occurred earliest in Newfoundlands. The Labrador Retriever was the breed in which symptoms appeared latest in life. Varied exercise had a positive effect and dogs that exercised on a daily basis on a lead and running free in different types of terrain were free of symptoms longer than dogs that were less active.

Based on the findings of this doctoral research, preventive measures related to early canine life can be recommended. If HD in its most serious forms can be prevented, the life quality of dogs will be improved.

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