

Diet as a puppy is a factor in the development of allergy and atopy related skin symptoms in adult dogs

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Puppyhood dietary factors may affect the onset of canine allergy and atopy related skin symptoms in adulthood, according to a study carried out at the University of Helsinki. Credit: Tani Simberg.

Researchers at the University of Helsinki studied the relationship between allergy and atopy related skin symptoms at adult age and different types of diets as well as individual dietary food items in the

same 4022 dogs when they were puppies.

"The puppies that had been fed raw tripe, raw organ meats, and human meal leftovers during puppyhood showed significantly less [allergy](#) and atopy related skin symptoms in adult life. On the other hand, puppies not getting any raw foods, eating most of their [food](#) as [dry food](#), i.e. kibble, being fed fruits, and heat-dried animal parts, had significantly more allergy and atopy related skin symptoms in adulthood", says DogRisk research group team leader, Docent Anna Hielm-Björkman from the Faculty of Veterinary Medicine, University of Helsinki.

According to the study, consumption of at least 20% of the puppy's diet as raw food, or less than 80% of the puppy's diet as dry food, associated with a significant decreased prevalence of allergy and atopy related skin symptoms in adult age. Also, in case of no consumption of raw food at all or eating 80% or more of the puppy's diet as dry food, there was a significant increase in the prevalence of allergy and atopy related skin symptoms in the same dogs, later in life. Further, when feeding 20 % of other type of processed commercial dog foods (such as canned or sausage packed foods), also this associated with a significant increase in the prevalence of allergy and atopy related skin symptoms, while consumption of zero % of the puppy's diet from these same foods, significantly decreased the prevalence of the disease in adulthood.

"These findings indicate that it was the raw food component that was the beneficial health promotor," says Hielm-Björkman, "and that even as little as 20% of the diet being raw foods, already gives health benefits".

In addition to the previous variables, puppies that were eating dead animals outside i.e. "air dried raw food", also showed a decrease in the incidence of allergy and atopy related skin symptoms as adults.

"Our mission is to find ways for the dog-owner to impact their own pet's health-span. We could see an association between lower prevalence of allergy and atopy related skin symptoms as adult and serving puppies fresh foods and avoiding processed foods as well as sweet fruits. That's a good start for any owner," says Manal Hemida, DVM from the DogRisk research group and from the Helsinki One Health network, and the main researcher of this study. "However, the study only suggests a causal relationship but does not prove it. Diet intervention studies are required to further elucidate the in-depth association between the development of atopy and allergy related skin symptoms and dietary factors such as raw and dry foods, human meal left-overs and the correct dosing of oils," concludes Hemida.

Data for the study

The DogRisk team used answers that dog-owners had given in an online feeding survey (in Finnish only) concerning their [puppies](#)' diets when they had been 2-6 months of age. To avoid reverse causality i.e. looking at associations between first getting the disease and therefore changing the [diet](#), only healthy dogs over 3 years of age (n=2864) were chosen as control dogs, whereas the dogs having the disease (n=1158) were chosen to be one year, or older. Adjusted regression models explained the associations between the disease and the food items while the associations between allergy and atopy related [skin](#) symptoms and the ratios of different diets backed up the previous results.

The research was published in the *Journal of Veterinary Internal Medicine*.

More information: Manal B. M. Hemida et al, Puppyhood diet as a factor in the development of owner-reported allergy/atopy skin signs in adult dogs in Finland, *Journal of Veterinary Internal Medicine* (2021).

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