

Food Allergies

By Sally Perea, DVM, MS, DACVN, Senior Nutritionist and Nathan Fastinger, PhD, Senior Nutritionist

Skin, coat, and gastrointestinal (GI) problems can often be associated with food allergies in dogs and cats. **A true food allergy is the result of an abnormal immune response to an ingested dietary protein, known as a food antigen.** Normally the immune system has a tolerance to dietary antigens, and will not form an immune response as it would against other foreign antigens, such as foreign bacteria or viruses. **When a food antigen is seen as foreign, it is attacked by the immune system, resulting in inflammation and problems like skin, paw & ear itchiness, vomiting, and/or diarrhea.**

Food allergy is different from food intolerance or sensitivity, where the immune system is not involved, but similar clinical signs are seen after eating a food that isn't tolerated. Examples of common food intolerances include "upset" stomachs caused by food scavenging (getting into garbage), lactose intolerance, and high fat foods in fat intolerant pets.



As discussed above, a true food allergy involves an immune response to a food protein that is seen as a foreign antigen. It is important to remember that these antigens can include not only the proteins found in meats and protein-rich ingredients like soy, but also the proteins found in grains, fruits, and vegetables (although allergies to plant ingredients are less commonly reported). **When a pet develops a food allergy to a particular food, the immune system develops antibodies that are specific and unique to that food and its antigens.** It is these antibodies that drive the immune response, resulting in the cascade of inflammation. In order for a pet to develop antibodies, they must have had previous exposure to the food. **Thus, any ingredients or foods that a pet has had previous exposure to is a potential food allergen, while foods that the pet has not previously eaten cannot be the cause of the pet's allergy.** Commonly utilized ingredients in North American pet foods, such as beef, chicken, corn, and wheat, are among the most commonly reported food allergens.¹ **The more common an ingredient is, the more chance there is for a pet to develop an allergy to it. A food or ingredient that may be commonly perceived as causing allergies cannot cause an allergy in a pet that has never eaten it.**

Chemically or enzymatically hydrolyzed proteins are theoretically "hypoallergenic" as the hydrolyzation process cuts up dietary protein into pieces that are smaller than the immune system can recognize (<10,000 kDaltons).² Currently available "hydrolyzated" pet foods include hydrolyzed chicken or hydrolyzed soy paired with potato, rice, or cornstarch. Unfortunately, there is the possibility that these hydrolysates may retain some intact proteins and thus still result in an allergic reaction.³

Pet parents that suspect food allergies should work with their veterinarian to first rule out other potential causes for skin, coat, and/or GI problems. Unlike environmental allergies where blood tests and skin testing can be used to identify what substances the pet is allergic to, there are no reliable laboratory tests that can be used to determine food allergies.⁴ Thus, an "elimination diet challenge" must be conducted to determine if food allergies are playing a role in the pet's problems. An elimination diet should include only ingredients that the pet has not been previously exposed to, or potentially a food that is formulated with hydrolyzed ingredients as discussed above. **Elimination diets should also be composed of just a few simple ingredients, with a single protein and single carbohydrate ingredient being ideal.**⁵ Foods designed for the management of food allergies typically have ingredients that are less common, such as peas, potatoes, lentils, oatmeal, lamb, venison, kangaroo, and duck.

Species specific fish ingredients can also be an excellent choice for pets without previous exposure to them, especially sustainable fish species such as salmon, menhaden and herring. Marine fish and fish oils are also rich in long-chain omega-3 polyunsaturated fatty acids, such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). **These special fatty acids, which are not found in terrestrial plants like flax, can aid pets with inflammatory conditions, such as food allergies,** by helping to reduce the production of pro-inflammatory mediators, called eicosanoids, that contribute to inflammation and worsen clinical signs.⁶

In addition to selecting ingredients that the pet is unlikely to have been exposed to, other nutrients such as B-vitamins and fermentable fibers can be utilized in the management of food allergy conditions. Essential B-vitamins provided in complete and balanced pet foods are important for maintaining the integrity of the skin.⁷ For pets with GI problems related to food allergies, feeding foods with fermentable fibers can help support a healthy GI tract.⁸ **Fermentable fibers, such as chicory root and in pea fiber, can serve as prebiotics** which provide fuel to beneficial intestinal bacteria that produce short-chain fatty acids, **which help maintain healthy cells that line the large intestine (aka colonocytes).**⁹

Working with your veterinarian to select the right food for your pet can be crucial to managing food allergic pets. For available natural foods that might avoid ingredients that your pet cannot tolerate, please speak with your veterinarian, your local independent retailer, and/or a Natura Product Adviser at 800-532-7261.

References

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