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Food Allergies & Limited Ingredient Diets

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Breeds More Commonly Diagnosed with Food Allergies[1,2]

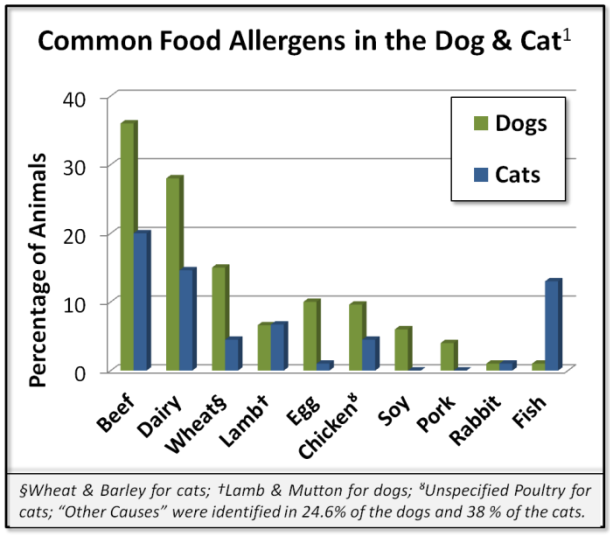
Adverse food reactions (AFRs) include food sensitivities (also called food intolerances) and food allergies. Food sensitivities are much more common than food allergies, but the discomfort and adverse health effects that our pets with food allergies can experience makes food allergy an important topic of discussion in veterinary medicine. In addition, medications and supplements might help to alleviate some symptoms of food allergy, but feeding a suitable diet can be curative.

Although food allergies are thought to be the cause of only ~1% of all dog and cat skin diseases, food allergies are also responsible for a significant portion of chronic digestive disorders, especially in cats.[1] There is no known sex predilection for food allergy, but certain dog and cat breeds seem to be more commonly affected.[1,2] The vast majority of dogs and cats with food allergy will be diagnosed prior to 1-3 years old, but food allergy can be diagnosed at any age, including in senior pets.[1,2] Interestingly, most pets diagnosed with food allergy have been eating the offending food for a long time, even years, prior to developing the allergy.[1]

It is important to understand that there are major differences in both the cause and internal reaction that our pets experience with food allergies compared to food sensitivities.

Food allergies are only caused by dietary proteins (also called food antigens); carbohydrates and fats cannot cause food allergies. Animal-origin protein sources like red meats/dairy, poultry/eggs, and fish are the most frequently diagnosed causes of food allergy in dogs and cats in North America.[1] This is partially because these ingredients are high in protein, but also because we feed dogs and cats as carnivores so animal-origin ingredients are very common in pet foods. Plant-origin ingredients may also be the cause of food allergies in pets, especially if the plant is high in protein (e.g. soy), or if the plant is commonly used as a concentrated vegetable protein source (e.g. wheat gluten).

A true food allergy is the result of an abnormal immune response. In contrast, food sensitivities do not involve the immune system—but distinguishing between food allergies and sensitivities can be challenging because the outward clinical signs (symptoms) can be very similar. Normally, the immune system has a tolerance to dietary proteins and so will not mount an immune response to them as it would against other foreign proteins (such as infectious bacteria and viruses). When a dietary protein is seen as foreign, however, it is attacked by the immune system, which results in a cascade of inflammation.



§Wheat & Barley for cats; †Lamb & Mutton for dogs; ¥Unspecified Poultry for cats; "Other Causes" were identified in 24.6% of the dogs and 38 % of the cats.

There has to be previous exposure to a dietary protein in order for it to cause a food allergy. When a pet's immune system sees a dietary protein as foreign, antibodies are made that are specific and unique to that dietary protein. It is these unique antibodies that drive the inflammatory immune response when the dietary protein is ingested again. A food that is a common cause, or is perceived to be a common cause, of food allergy cannot be the cause for a pet who has never eaten that specific food before.

COMMON CLINICAL SIGNS OF FOOD ALLERGY IN DOGS & CATS	*I See…*	*My Pet Feels & Experiences…*
SKIN	• Dull/Dry Skin & Coat • Alopecia (Hair Loss) • Pyoderma (Infection)	• Pruritus (Itchiness) • Discomfort/Pain
EARS	• Erythema (Redness/Warmness) • Otitis (Inflammation +/- Infection) • Exudate (Discharge/Oozing)	• Pruritus • Head Shaking • Discomfort/Pain
REARS	• Diarrhea (Intermittent or Chronic) • Vomiting (Less common) • Scooting +/- Inflamed Anus	• Urgency to Defecate • Upset Stomach • Anal Pruritus • Discomfort/Pain

If your pet is showing clinical signs consistent with food allergy, the first step is to work with your veterinarian to try to rule out other potential causes for skin, coat, and/or digestive problems. Unlike environmental allergies (e.g. dust mites, pollens, etc.), where blood and skin tests can be very helpful in identifying the causative allergens, at this time there are still no reliable laboratory tests that can be used to diagnose food allergies in dogs or cats.[3,4] Thus, an elimination diet trial with challenge test remains the only universally accepted method to diagnose food allergy.[1] An elimination diet trial is where a new diet is carefully selected to try to eliminate any food(s) containing dietary protein(s) thought to be responsible for the food allergy. After a minimum of 8-12 weeks feeding the elimination diet exclusively, and if clinical signs resolve, a challenge test must be performed in order to identify the specific source(s) of the food allergy. The challenge test is performed by feeding the offending foods in question one at a time to see if the clinical signs of food allergy return (e.g. itchiness, diarrhea, etc.). Clinical signs might recur in as little as minutes to as long as 14 days.[5] Obviously, it can be daunting to offer a food that could cause a relapse, and in some cases identification of offending food(s) can be nearly impossible. Sometimes, even when challenge tests are performed and one or more offending foods are identified, it can still be difficult to differentiate between a food allergy or sensitivity.

Working with your veterinarian to select an appropriate diet for your pet can be crucial to managing food allergic pets and to rule out other potential causes for skin, coat, and/or digestive problems. As stated, an elimination diet should be carefully chosen to help identify what dietary proteins need to be avoided. Important considerations when choosing an elimination diet should always include:

- **Limited Ingredient Diets:**
  - To provide complete and balanced nutrition from the fewest possible key ingredients
  - To help to narrow down which dietary proteins are problematic and which are well-tolerated
- **Novel Ingredients:**
  - To avoid dietary proteins previously fed or thought to be problematic
- **Treats:**
  - Discuss any treats, supplements, and medications with your veterinarian because they might also have the potential to cause food allergies
- **Expert Formulation:**
  - To focus on the importance of digestive and skin & coat health

Limited Ingredient Diets (LID's) should be composed of just a few pure & simple ingredients, ideally with a single animal protein and single carbohydrate source.[6] In most cases, LID's are the most appropriate choice both for an elimination diet trial and for long-term nutritional management of AFR's including food allergies. In some cases, homemade diets are also recommended, but it is vital that homemade diets are very carefully formulated as they are recognized as a leading cause of nutritional deficiencies in dogs and cats.[7-15] Hydrolyzed diets are another potential option for pets with food allergies. Hydrolyzed diets are theoretically "hypoallergenic" because the proteins are chemically or enzymatically broken down into fragments that are smaller than the immune system can recognize (<10,000 kDaltons).[16] There are several hydrolyzed pet foods available, but unfortunately there is always the possibility that these diets retain some intact proteins and thus still result in allergic reactions.[17,18] In addition, hydrolyzed diets are generally not very palatable and are quite expensive.

In addition to using dietary therapy to aid in the nutritional management of food allergies, certain nutrients such as B-vitamins, prebiotic fibers, and long chain omega-3 fatty acids from marine fish oils can be helpful. Essential B-vitamins provided in complete and balanced pet foods are important for maintaining the integrity of the skin.[19] For pets with digestive problems related to food allergies, foods with prebiotic fibers can help to support a healthy digestive tract.[20] Prebiotic fibers, such as chicory root and pea fiber, contain inulin which is an energy source for beneficial or "good" intestinal bacteria. The benefit of encouraging the growth of these "good" bacteria is that they produce short-chain fatty acids, which in turn help to maintain a healthy and well-functioning large intestine by serving as an energy source for large intestinal cells called colonocytes.[21] Marine fish oils contain the long-chain omega-3 polyunsaturated fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) which are not found in terrestrial plant sources of omega-3 fatty acids like flaxseed. EPA and DHA are special fatty acids that can help pets with inflammatory conditions, such as food allergies. EPA and DHA help by reducing the production of pro-inflammatory mediators, called eicosanoids, that contribute to inflammation and can worsen clinical signs associated with inflammatory conditions.[22] For pets without previous exposure to fish, species-specific fish ingredients, especially sustainable fish species such as salmon, herring, and menhaden, can be an excellent dietary protein source because they will also supply these special fatty acids.

If you suspect that your pet is experiencing a food allergy please speak with your veterinarian. It you would like more information about the California Natural and California Natural Grain Free lines of natural limited ingredient diets from Natura Pet, please speak with your veterinarian, your local independent retailer, and/or a Natura Pet Product Adviser at 1-800-532-7261 or custserv@naturapet.com. For detailed product information please visit our website at www.naturapet.com and for ingredient sourcing information at your fingertips visit us at www.seebeyondthebag.com.

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