



**Veterinary Emergency
+ Referral Center**
of Hawaii

**Ettinger: Textbook of Veterinary
Internal Medicine, 7th Edition
Gastrointestinal Food Allergies
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What is an allergic reaction?

The immune system of the body is designed to identify or kill foreign substances such as bacteria. An allergy is an immune-mediated reaction that harms the body instead of protecting it. Examples of such reactions include people who die from a single bee sting or from eating a strawberry. These are called "hypersensitivity" reactions. Depending on the type of hypersensitivity reaction, of which there are four, one may see excessive irritation (inflammation) or decreased size (constriction) of vessels or airways.

The substances that mediate these reactions (antibodies and lymphocytes) are programmed to respond to specific substances, called *antigens*. Antigens that cause hypersensitivity reactions are usually proteins. Depending upon where the hypersensitivity reaction takes place and how many antibodies or lymphocytes are involved, the consequences may vary from sudden, life-threatening episodes to delayed ones that just cause inflammation in one part of the body.

In dogs and cats, most hypersensitivity reactions resulting from food cause either skin disease (characterized by scratching) or gastrointestinal signs such as diarrhea and/or vomiting. Sometimes the skin and GI tract are simultaneously affected in animals that have a food allergy, but many animals with food hypersensitivity have one or the other.

What are the symptoms of food allergy?

The GI symptoms caused by food allergy sometimes occur immediately after eating (i.e., immediate-type hypersensitivity reactions). However, food allergy can also be a "delayed" hypersensitivity reaction, meaning the consequences take hours or days to manifest after eating the food, and then they persist for hours or days after each exposure. Most pets eat the offending antigens everyday; therefore their symptoms tend to be relatively constant. Rarely is a clear-cut association made between eating and the onset of symptoms, making it hard to determine that eating a particular food is causing this disease.

Sometimes changes can be seen on biopsy samples taken from the intestine that suggest allergy (i.e., eosinophilic inflammation), but the inflammation caused by food allergies usually looks just like that caused by other diseases. Therefore the best way to diagnose a food allergy is to feed your pet a hypoallergenic diet (i.e., a therapeutic dietary trial) and see if the problems disappear.

What is a hypoallergenic dietary trial?

For a therapeutic trial for a food allergy, the diet must be carefully chosen. No one diet is hypoallergenic for all dogs and cats; one must select a diet that is appropriate for each individual pet. A pet may be allergic to almost any component of its current diet; therefore you need to select foods that the pet has not eaten before (and hence are unlikely to have developed allergies to) and/or food to which allergies seldom develop. We usually choose a diet that contains as few ingredients as possible, which makes it still less likely that there will be anything to which the patient responds. Some commercial diets are partially digested (hydrolyzed). This process helps decrease the potential for the diet to cause allergy but does not completely eliminate it.

Because some pets that are allergic to multiple antigens require a strict hypoallergenic diet, homemade diets are sometimes needed. Although inconvenient, they are often the most restrictive type diets possible and the most beneficial. Most homemade diets are not balanced, but are adequate for use in sexually mature animals for the 2 to 4 months that the animal is on the food trial. We have to make many assumptions when we choose these diets, and it is possible that your pet is allergic to something unexpected.

Once such a dietary trial is begun, it is imperative that absolutely ***nothing*** else be fed. Even flavored pills or toys can contain enough antigens to cause signs of food allergy to persist. The dietary trial must be performed long enough to allow the clinical signs of delayed-type hypersensitivity to disappear. Some patients evidence improvement within a day of dietary change, whereas others require 4 to 8 weeks before improvement is seen. If a patient has a dietary allergy, it is possible it has a genetic predisposition to allergy and may eventually become allergic to the ingredients of the hypoallergenic diet that it responded well to at first.

Other tests have been used in an effort to determine what dietary components are causing a pet's allergy. As of this writing, these tests have not always correlated well with the results of dietary trials.