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## Food Allergy

### Issue Description

*Food allergy is an allergic reaction to one or more ingredients in a pet's food. The most common allergens are beef and milk products, cereals (wheat, corn, soya), chicken and eggs.*

### Causes

The most common food allergens are beef, chicken, pork, fish, milk, whey, eggs, corn and soy. All these foods are high in protein. The reason that proteins are so often involved is that they are very large molecules, each component of which can combine with an antibody or immune system T-cell receptor to produce an allergic reaction.

Food allergies will show up within 4 to 24 hours of eating the allergenic food, at least in the early stages. Later on, the dog will show symptoms constantly. As in other types of allergies, skin problems are the common signs, but some dogs also vomit, and have diarrhea or gas.

Allergies can cause more than itching. In response to the allergen, the sebaceous glands of the skin may become over-productive, altering the normal condition of the skin. This leaves the skin open to infection (pyoderma). Pyoderma causes not only MORE itching, but also pain and inflammation, ear infections, or even abscesses beneath the skin.

### Symptoms

Symptoms of a food allergy are itching, licking or chewing. Otitis Externa (ear infection) along with other skin problems are also common in conjunction with food hypersensitivity. Some pets may also have diarrhea and other digestive problems. Symptoms can appear at any age, whether a pet has just started a new diet or has been eating the same food for several years.

### Diagnosis

Diagnosis and management of food allergy in the dog has been made easier in recent years because of new unique protein/limited ingredient diets available in veterinary medicine. The length of the diet trial has been extended from three weeks up to 10-12 weeks. Studies have shown that some dogs may not show significant improvement on their diet trial until 10 - 12 weeks into the food trial. It is doubtful that a dog that is experiencing no change in clinical signs at eight - nine weeks will improve dramatically after that time.

Diets containing fish, lamb, duck, venison, rabbit, kangaroo, modified soy, modified chicken livers etc.. as the protein source are all commercially available. Most of these diets are as limited as possible in the remainder of their ingredients. The concept of protein modification to reduce antigenicity has been utilized in formulation of Hill's z/d ultra, low allergen and lam's H/A. In addition, many diets contain an increased amount of omega three fatty acids or decreased omega 6 to omega 3 fatty acid ratios to decrease the formation of inflammatory mediators in the skin.

The most important concept to remember is an immunologic response can be mounted to any substance (especially protein) that has not been modified to the point of rendering it potentially non-allergenic. Thus, it is very important to obtain a complete dietary history from the client concerning their pet before choosing a food for the food allergy elimination diet trial if choosing a novel protein source diet. None of the substances in the food trial diet should have been in the previous diet(s) of the patient. In addition, the patient should be placed on non-chewable, non-flavored heartworm prevention for the length of the diet trial. The patient should be allowed no other treats, chew toys, raw hides etc. Cheating on the diet by giving treats, animal eating garbage, or scavenging under the high chair can occur.

If the animal is severely pruritic, a short course of oral short acting corticosteroids or other non-steroidal anti-

inflammatory medication may be warranted. This therapy must conclude a few weeks before the end of the dietary trial. At the end of the trial, an apparent response to the test diet (no symptoms) should be confirmed with a challenge, using the former diet. Symptoms should reappear on average in a few hours up to 5-7 days. Any secondary skin diseases (seborrhea, Malassezia or staphylococcal folliculitis) should be cleared before the trial or the coexistent problems need to be treated throughout the length of the diet trial and into the re-challenge phase. If the only complaint is recurrent staphylococcal folliculitis or Malassezia dermatitis, a relapse rate must be established prior to institution of the diet trial and the diet must be given for longer than the relapse interval.

After a positive diagnosis has been confirmed by re-challenge, the animal should be placed back on the test diet until asymptomatic again OR if the owners wish to find the problematic ingredient, then suspected ingredients can be added one at a time. Alternatively, the animal can be continued on the test diet. In these instances, only a tentative diagnosis of food allergy can be made.

## **Treatment**

The only therapy is to avoid the allergen. Many owners will elect to continue on the "food trial" commercial diet. If they do not wish to pinpoint the individual allergen, they should be encouraged to keep a list of the food substances that has been previously fed to their pet. With this information, if they desire to change diets or if the diet being fed becomes unavailable, they may be able to choose another commercially available diet that avoids proteins from the "potentially offending protein" list.

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