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ALLERGY

What is an allergy?

An allergy is a state of over-reactivity or hypersensitivity of the immune system of a pet to a particular substance called an 'allergen'. Most allergens are proteins. The allergen protein may be of insect, plant or animal origin. Initial exposure of the dog, or more likely multiple exposures, to the allergen may over-sensitize the immune system, such that a subsequent exposure to the same or related allergen causes an over-reaction. This means that the immune response, which normally protects the dog against infection and disease, can be harmful. The actual immune reactions involved in allergies are quite complex. Most reactions involve an antibody in the blood called Immunoglobulin E (IgE). In an allergic reaction the allergen protein molecules combine with IgE antibody molecules and attach to a type of cell called mast cells, found in many tissues. When these cells are attached to the allergen, they break up and release potent chemicals such as histamines, which cause local inflammation. This inflammation causes the various signs associated with an allergic reaction.

What are the symptoms of allergies in dogs?

The most common symptom associated with allergies is itching of the skin, either localized (one area) or generalized (all over the body), repeat ear infections, and hot spots. Another group of symptoms involves the respiratory system with coughing, sneezing, and/or wheezing. Sometimes, there may be runny discharge from eyes or nose. The third manifestation involves the digestive system, and the dog may vomit or have diarrhea.

How common are allergies in dogs?

Unfortunately allergies are quite common in dogs of all breeds and backgrounds and can be inherited.

What are the common allergy-causing substances (allergens)?

A very large number of substances can act as allergens. Most are proteins of insect, plant or animal origin, but small chemical molecules known as *haptens* can also cause allergy. Examples of common allergens are grains (in food), pollens, mold spores, dust mites, shed skin cells, insect proteins such as flea saliva, and some instances medications or the common meats such as chicken or beef..

DIFFERENT ALLERGIES

Contact Allergy Contact allergy results from direct contact to allergens from flea collars/bedding to grass. If the dog is allergic to these substances, there will be skin irritation and itching at the points of contact. Removal of the allergen (once it can be identified if possible) solves the problem. You can also wipe your pet's paws to reduce allergen absorption through paws.

Flea Allergy Flea allergy is the exaggerated inflammatory response to a flea bite. Flea saliva is the allergen. It is a common allergy of dogs, although only a minority of dogs becomes allergic. Most dogs experience minor irritation from flea bites. But the flea allergic dog will react to a single bite with severe local itching. It will bite and scratch itself and may remove large amounts of hair. Secondary bacterial

infection may occur in the broken skin. The area most commonly involved is over the rump in the tail base region. Because one flea can be a problem for the allergic dog, strict flea control is essential. This is difficult considering the life-cycle of fleas, but there are means for instituting an intensive flea elimination program in the house (see *Fleas*). One of our veterinarians can give you tips on protecting your dog from fleas. We encourage frontline for ALL allergy patients regardless.

When strict flea control is not possible or in cases of severe itching, corticosteroids (steroids) can be used, under careful veterinary guidance, to block the allergic reaction and give relief. If secondary bacterial infection is present, appropriate antibiotics will be prescribed.

Inhalant Allergy (Atopy) ?

Although allergic rhinitis and bronchitis might be regarded as the result of inhaled allergens, the term “Inhalant Allergy” in the dog is used as a synonym for Atopy. The main causative inhaled allergens are tree pollens (cedar, ash, oak, etc.), grass pollens, weed pollens (ragweed, etc.), molds, mildew, and house dust mites. Many of these allergies occur seasonally, such as ragweed, cedar, and grass pollens. However, others such as molds, mildew, and house dust mites are year-round. When humans inhale these allergens, the allergy manifests mainly with respiratory signs – runny eyes, runny nose, and sneezing (“hay fever”). But in dogs the result is itchy skin (pruritis). So the condition is also called “Inhalant Allergic Dermatitis”. The dog may rub its face, lick its feet and scratch the axillae (underarms).

Most dogs that have inhalant allergy start showing signs between one and three years of age. Affected dogs will often react to several allergens. If the offending allergens can be identified, by intradermal skin tests or IgE allergy tests, the dog should be protected from exposure to them as much as possible. But this is difficult and recurrent bouts are likely. These allergies can be treated but a permanent cure is not usually possible.

Treatment depends largely on the length of the dog's allergy season. It involves three approaches:

1. **Anti-inflammatory/Antibiotics.** Treatment with anti-inflammatory or antihistamine drugs can manage many allergic dogs. 1) Your doctor will usually start with an antihistamine before trying a steroids in conjunction with antibiotics like cephalexin or simplecef which help take care of the bacteria that are affecting the irritated skin making the itching worse. Removal of corn and wheat from the diet which are pro-inflammatory agents to many dogs often reduces overall allergies.
2. **Also fatty acid supplementation** of the diet can improve the response to steroids and antihistamines in many cases (FISH oil in the form of arthritic supplements has concentrations high enough to see true results-it must be used for a t least two months before you will see results). Steroid use should be use cautiously as side chronic use of steroids can lead to cushings disease, diabetes, and joint problems.
3. **Shampoo therapy.** Frequent bathing with a hypoallergenic shampoo can be soothing and helpful. The bathing may also rinse out allergens in the coat that could be absorbed through the skin.
4. **Hyposensitization.** The third major form of allergy treatment is hyposensitization with specific antigen injections or "allergy shots". Once the specific sources of allergy are identified very small amounts of the antigen are injected weekly. This repeated dosing has the objective of reprogramming or desensitizing the immune system. Results are sometimes good but success is variable. We have a blood version of this test or we can refer you to a Dermatologist who performs a skin version that can sometimes give more specific results.
5. **Diet trials** – Diet trial either to limited ingredient diets or specific grain free diets may also be recommended.

Food Allergy Food allergy can develop to almost any protein or carbohydrate component of food. It most commonly develops in response to the protein component of the food or a particular food origin; beef, pork, chicken, or turkey are commonly associated with food

allergies. Food allergy can become apparent at almost any age. Food allergy may produce any of the clinical signs previously discussed including itching, digestive disorders, and respiratory distress. Food allergy may occur with other allergies, such as atopy. Treatment requires identifying the offending component(s) of the diet and eliminating them. Testing for specific food allergies requires test feeding with a special hypoallergenic diet. Because it takes at least eight weeks for all other food products to be removed from the body, the dog must eat the special diet exclusively for 8-12 weeks. An easy food trial to start is eliminating corn based foods, corn can enhance any allergy. If this alone helps your pet no need to proceed with a different food trial. If it does not consider switching to a different protein source (duck, venison, something your dog has never seen before. If a positive response occurs, we will advise you on how to proceed. **It must be emphasized that if the diet is not fed exclusively, it will not be a valid test.** All table food and treats must be discontinued during the testing period. The only fresh food allowed are those from which the diet is made of. So if your pet is on a venison food trial, only venison scraps or whatever vegetable matter may be in the food can be shared with him/her. There may be problems with certain types of chewable tablets such as heartworm preventative, ask our doctors for other options.

Screen for disease that enhance allergies

One of our veterinarians may recommend testing for hypothyroidism as this may exacerbate allergies. If your dog shows signs of being tired more than normal, weight gain, or rat like tail, please review this with our staff.

Caution:

The manifestations of allergies can be confused with other disorders, or concurrent with them. Therefore, do not attempt to diagnose your dog without professional assistance. Be prepared for your pet to receive a full diagnostic work up. If an allergy is diagnosed and identified, the whole family must follow allergy recommendations very closely if success in controlling the problem is to be achieved.

Referral to a specialist.

Dermatologists for dogs can help in difficult cases as mentioned above. They can do a skin scratch test to help determine exactly what your pet is allergic to (which is more sensitive then the blood test that can be done at our lab). A dermatologist will require that all the above mentioned has been try or they will proceed to recommend the above.