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## ALLERGIES

### WHAT ARE ALLERGIES?

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 may be of insect, plant or animal origin. Examples of common allergens are pollens, mold spores, dust mites, shed skin cells, insect proteins such as flea saliva, and some medications. While an allergy may develop from a single exposure, that is rare and usually there have been multiple exposures to the allergen before the immune system decides to over-react. This means that the immune response, which normally protects the pet against infection and disease, is acting in a harmful way.

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. 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.

### TYPES OF ALLERGIES

Common allergies in animals:

- Flea
- Inhalant (Atopy)
- Bacterial or Yeast Hypersensitivity
- Food
- Contact (least common)

### SYMPTOMS OF ALLERGIES

The most common symptom associated with allergies in pets is itching of the skin - either localized (one area) or generalized (all over the body).

Another group of symptoms involves the respiratory system with coughing, sneezing, wheezing, and itchy, runny eyes. While respiratory signs are most common in people, itch is far more common in pets. Less commonly, animals may have digestive system problems such as vomiting and diarrhea.

Severe allergic reactions that cause swelling and puffiness do occur in pets and are often caused by insect bites or stings. Fortunately they rarely progress to respiratory distress. Anaphylaxis and shock are very rare but can happen in pets, and are the most severe manifestation of allergies.

## HOW COMMON ARE ALLERGIES IN PETS?

Unfortunately allergies are as common in cats and dogs as in people, and can affect all breeds including the mixed breeds. Some allergies are inherited.

## DIAGNOSIS

Definite diagnosis of allergies is difficult and involves eliminating all other causes of skin problems, such as mange, primary skin infections and thyroid disease. Even when we are sure it is allergies, it can be hard to determine which type. A flea allergic pet needs only one flea to flare up and if they are licking they will often eat the evidence. Food allergies require a response to a diet trial. Bacterial hypersensitivity is usually controlled on antibiotics. Inhalant allergies require allergy testing to diagnose and are often seasonal in nature.

## FLEA ALLERGY

Flea allergy is an exaggerated inflammatory response to a flea bite. Flea saliva is the allergen. It is a common allergy of pets. Most animals experience minor irritation from flea bites, but the flea allergic animal will react to a single bite with severe itching. The pet 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 in dogs is the rump and the tail base region. Cats tend to lick large areas bald or develop scabs up the middle back and neck area.

Because one flea can be a problem for the allergic pet, strict flea control is essential. Corticosteroids can be used temporarily, to relieve the itch. If a secondary bacterial infection is present, appropriate antibiotics need to be prescribed.



## INHALENT ALLERGY (ATOPY)

The main causative inhaled allergens in pets 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"). While pets occasionally have respiratory signs, most have itchy, itchy skin. So the condition is also called "Inhalant Allergic Dermatitis". Atopy in the dog is usually characterized by seasonal, generalized itching. The dog chews, licks and scratches almost the entire body, especially the feet and face, groin, armpits & hind end. Saliva will often stain light colored hairs resulting in orange or reddish brown. Most pets that have inhalant allergy start showing signs between one and three years of age. Affected animals will often react to several allergens. If the offending allergens can be identified, by skin or blood allergy tests, the dog should be protected from exposure to them as much as possible. But this is difficult and recurrent bouts are likely. Allergy shots can be tried to desensitize the animal. These allergies can be treated but a permanent cure is not usually possible.

## FOOD ALLERGY

Food allergy can develop to almost any component of food, though most commonly to a protein or carbohydrate. Food allergy can become apparent at almost any age. Food allergy may produce any of the clinical signs previously discussed including itching (especially the face and ears), digestive disorders, and respiratory distress. Pets with food allergy often have other allergies, such as atopy. Pets with food allergies are usually poorly responsive to anti-inflammatory medication. Response to feeding a hypoallergenic diet is both the test to diagnosis the allergy and the treatment. There are also blood tests that can give an indication of what food the pet is allergic to. The only cure for food allergy is avoidance. Some pets will require medication during severe episodes but most pets can be helped to some degree with a hypoallergenic diet.



## BACTERIAL/YEAST HYPERSENSITIVITY

Some dogs develop rashes that respond to antibiotics but return repeatedly. These animals often have concurrent disease such as atopy, food allergies or hypothyroidism. But even when underlying problems are found and treated, the skin infection will often recur spontaneously. The underlying bacteria or yeast the pet is over-reacting to is a normal skin inhabitant and cannot be eliminated. Most of these pets will require antibiotic & antifungal treatment throughout their life, although bacterial hyposensitization (allergy shots to the skin bacteria) may help.

## CONTACT ALLERGY

Contact allergy is the least common type of allergy in dogs. It results from direct contact to an allergen such as wool bedding, synthetic fibers, and pyrethrins in flea collars or plastic food dishes. If the pet 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) solves the problem.

## TREATMENT

We often don't know what type of allergy a pet has initially and diagnosis is often made on response to treatment. The treatment chosen depends also on the length of the pet's allergy season.

1. **Anti-inflammatory.** Treatment with anti-inflammatory drugs such as **corticosteroids**, sometimes given with **antihistamines**, will quickly block the allergic reaction in most cases. **Fatty acid supplementation** of the diet can improve the response to steroids and antihistamines in some cases.



2. **Topical 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. Antibacterial shampoos will also help flush away offending bacteria.

There are coat conditioners available in a cream-rinse or leave-on spray that help soothe irritated, itchy skin.

Topical protectants/fatty acids are also available to help reduce itching.

3. **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.

4. **Hypoallergenic Diet.** Treatment for food allergy 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. If a positive response occurs, your veterinarian 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, treats or vitamins must be discontinued during the testing period.

5. **Antibiotics.** While some dogs do have bacterial hypersensitivities many scratching dogs cause secondary skin infections simply from the trauma and antibiotics are often required.

6. **Antifungals.** If your pet has a yeast organism involved in the skin infection, he will need a course of antifungal medication.

