

CANINE ALLERGY

What are allergies, and how do they affect dogs?

One of the most common conditions affecting dogs is allergy. In the allergic state, the dog's immune system "overreacts" to foreign substances (allergens or antigens) to which it is exposed. These overreactions are manifested in three ways. The most common is itching of the skin, either localized (one area) or generalized (all over the dog). Another manifestation involves the respiratory system and may result in coughing, sneezing, and/or wheezing. Sometimes, there may be an associated nasal or ocular (eye) discharge. The third manifestation involves the digestive system, resulting in vomiting or diarrhea.

Are there several types of allergies?

There are five known types of allergies in the dog: contact, flea, food, bacterial, and inhalant. Each of these has some common expressions in dogs, and each has some unique features.

Contact Allergy

Contact allergy is the least common of the five types of allergy. They result in a local reaction of the skin. Examples of contact allergy include reactions to flea collars or to types of bedding, such as wool. If the dog is allergic to such substances, there will be skin irritation and itching at the points of contact. Removal of the contact irritant solves the problem. However, identifying the allergen can require some detective work.

Flea Allergy

Flea allergy is common in dogs. A normal dog experiences only minor irritation in response to flea bites, often without any itching. On the other hand, the flea allergic dog has a severe, itch-producing reaction when the flea's saliva is deposited in the skin. Just one bite causes such intense itching that the dog may severely scratch or chew itself, leading to the removal of large amounts of hair. There will often be open sores or scabs on the skin, allowing a secondary bacterial infection to begin. The area most commonly involved is over the rump (just in front of the tail).

The most important treatment for flea allergy is to get the dog away from all fleas. Therefore, strict flea control is the backbone of successful treatment. Unfortunately, this is not always possible in warm and humid climates, where a new population of fleas can hatch out every 14-21 days. When strict flea control is not possible, corticosteroids (or "cortisone" or "steroids") can be used to block the allergic reaction and give relief. This is often a necessary part of dealing with flea allergies. Fortunately, dogs are more resistant to the side-effects of steroids than humans; so much of what you know about the side-effects in people do not apply to dogs. If a secondary bacterial infection occurs, appropriate antibiotics must be used.

Bacterial Allergy

There are many types of *Staphylococcus* (*Staph*) bacteria. Some cause severe disease and some do

not. There are several species of *Staphylococcus* bacteria that live on normal dog skin. If the skin is normal and the dog's immune system is normal, *Staph* causes no problems to its host. However, some dogs develop an allergy to this bacterium. When this happens, the dog develops areas of hair loss that look much like ringworm. They are often round and 1/2 to 2 inches (1-5 cm) in diameter. These same lesions develop in true *Staph* infection; they are easily treated with certain antibiotics, but the *Staph*-allergic dog has recurrent "*Staph* infections." The lesions will usually clear with appropriate antibiotics but return as soon as antibiotics are discontinued. After a while, some dogs become resistant to antibiotic treatment.

Treatment of *Staph* allergy involves antibiotics to control the immediate problem and desensitization with *Staph* antigen for long-term relief.

Inhalant Allergy

The most common type of allergy is the inhalant type, or atopy. Dogs may be allergic to all of the same inhaled allergens that affect humans. These include tree pollens (cedar, ash, oak, etc.), grass pollens (especially Bermuda), weed pollens (ragweed, etc.), molds, mildew, and the house dust mite. Many of these allergies occur seasonally, such as ragweed, cedar, and grass pollens. However, others are with us all the time, such as molds, mildew, and house dust mites. When humans inhale these allergens, we express the allergy as a respiratory problem; it is sometimes called "hay fever." The dog's reaction, however, usually produces severe, generalized itching. In fact, the most common cause of itching in the dog is inhalant allergy.

Most dogs that have inhalant allergy react to several allergens. If the number is small and they are the seasonal type, itching may last for just a few weeks at a time during one or two periods of the year. If the number of allergens is large or they are present year-round, the dog may itch constantly.

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

1. **Anti-inflammatory.** Anti-inflammatory therapy will dramatically block the allergic reaction in most cases. Steroids ("cortisone") may be given orally or by injection, depending on the circumstances. If steroids are appropriate for your dog, you will be instructed in their proper use. Antihistamines can be of value in treating some allergic dogs when they are combined with steroids. In some dogs, antihistamines can significantly decrease the amount of steroid needed to provide relief. Fatty acid supplementation can also be implemented with steroids and antihistamines. When the three of them are combined, some allergic dogs are significantly improved. This is a non-specific approach, which does not treat the allergy, only the complications of the allergic state (itching).
2. **Shampoo therapy.** Many dogs are helped considerably by frequent bathing with a hypoallergenic shampoo. It has been demonstrated that some allergens may be absorbed through the skin. Frequent bathing is thought to reduce the amount of antigen exposure through this route. In addition to removing surface antigen, bathing alone will provide some temporary relief from itching and may allow the use of a lower dose of steroids.
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. The purpose of this therapy is to reprogram the body's immune system. It is hoped that as time passes, the immune system will become less reactive to the problem-causing allergens. If hyposensitization appears to help the dog, injections will continue for several years. For most dogs, a realistic goal is for the itching to be significantly reduced in severity; in some dogs, itching may completely resolve. Generally, steroids are only used on a brief and intermittent basis. This therapeutic approach is recommended for the middle-aged or older dog that has year round itching caused by inhalant allergy. This approach is not successful with food allergy.

Although hyposensitization is the ideal way to treat inhalant allergy, it does have some drawbacks and may not be the best choice in certain circumstances and for these reasons:

1. **Cost:** This is the most expensive form of treatment.
2. **Age of the Patient:** Because many dogs develop additional allergies as they get older, young dogs may need to be retested 1-3 years later.
3. **Success Rate:** About 50% of dogs will have an excellent response. About 25% get partial to good response. About 25% get little or no response. The same statistics are true for people undergoing desensitization.
4. **Food Allergies:** Although tests for food allergy are available, the reliability of the test is so low that it is not recommended at this time. A food trial remains the best diagnostic test for food allergy.
5. **Time of Response:** The time until apparent response may be 2-5 months, or longer.
6. **Interference of steroids:** Dogs must not receive oral steroids for two weeks or injectable steroids for six weeks prior to testing; these drugs will interfere with the test results.

Food Allergy

Dogs are not likely to be born with food allergies. More commonly, they develop allergies to food products they have eaten for a long time. The allergy most frequently develops in response to the protein component of the food; for example, beef, pork, chicken, or turkey. Food allergy may produce any of the clinical signs previously discussed, including itching, digestive disorders, and respiratory distress. We recommend testing for food allergy when the clinical signs have been present for several months, when the dog has a poor response to steroids, or when a very young dog itches without other apparent causes of allergy. Testing is done with a special hypoallergenic diet. Because it takes at least eight weeks for all other food products to get out of the system, the dog must eat the special diet exclusively for 8-12 weeks (or more). If positive response occurs, you will be instructed on how to proceed. *If the diet is not fed exclusively, it will not be a meaningful test.* We cannot overemphasize this. If any type of table food, treats or vitamins are given, these must be discontinued during the testing period. There may be problems with certain types of chewable heartworm preventative, as well. Your veterinarian will discuss this with you.

Because dogs that are being tested for inhalant allergy generally itch year round, a food allergy dietary test can be performed while the inhalant test and antigen preparation are occurring.

INSTRUCTIONS

Those instructions which are specific for your dog have been checked

___ 1) An injection of steroids was given. Relief should be apparent within 12-24 hours. If not, please call. The dog should feel better and itch less for about one month. If an increase in water consumption or urination occurs, please report this to us for future reference. (These side-effects are common with steroid administration and will go away in a few days without treatment.) Return for further evaluation when the first signs of itching recur.

___ 2) Begin oral steroids when the first signs of itching return. Give ___ tablets every other morning. Adjust the dosage upward or downward to the lowest effective dose, with a maximum dose of _____ permitted. Stop giving the medication every 4-6 months to see if there are times of the year when therapy is not needed. Report any increase in water consumption to us at once.

___ 3) We have dispensed oral steroid tablets. Give ___ of the ___ mg tablets every other day for 3 doses (6 days), then ___ tablets every other day for 3 more doses (6 more days). Continue this downward progression (_____) until the first signs of itching recur. At that time, go back to the next higher level and report that level to us (so we can be sure it is a safe level).

Stop giving the tablets every 4-6 months to see if there are periods of the year when they are not necessary. When itching returns, begin immediately at the maintenance dose. If that does not stop

the itching, increase the dosage slightly (to a maximum of ___ tablets) for a few doses, then return to the lower dose.

Report any increase in water consumption to us at once. (This may occur at the initial dose but should stop on the maintenance dose.)

___ 4) Your dog is to exclusively eat a hypoallergenic diet. If it will not do so readily, mix it 25:75 with the current diet for several days, then gradually increase the special diet to 100%. If this does not work, contact us for an alternative plan. Discontinue any chewable treats or vitamins, including heartworm preventatives. (There is a heartworm prevention product available in a non-chewable tablet than should be substituted.) Table food is not allowed. Offer only distilled water to drink, if that is possible.

___ 5) Your dog has a flea allergy or has enough fleas to make the other allergy problem worse. Flea control is very important and should include treating the dog and its environment. Bear in mind that flea allergies often accompany other types of allergies, especially inhalant allergy.

___ 6) Your dog has a bacterial skin infection secondary to allergy. The following are recommended:

a) Antibiotics are to be used for the next _____ days. If the infection is not gone by the time the medication is completed, call for a refill or for a change in medication.

b) The medicated shampoo, _____, is to be used every _____ days. Allow the shampoo to stay in the haircoat for a few minutes before thoroughly rinsing the dog.

c) The topical medication, _____, is to be used _____ times daily for _____ days.

___ 7) Your dog has a *Staph* allergy. The following are recommended:

Antibiotics are to be used for the next _____ days.

The medicated shampoo, _____, is to be used every _____ days.

c) *Staph* antigen injections will be given daily for 5 consecutive days beginning _____ then weekly for 3 weeks. Thereafter, weekly injections will be given by you, depending on need and response.