



O A K B A Y A N I M A L H O S P I T A L

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CANINE INHALANT 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.

What is inhalant allergy?

The most common type of allergy is the inhalant type, also known as 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.

What happens when a dog inhales something to which it is allergic?

When humans inhale allergens, we express the allergy as respiratory problems. These include coughing, sneezing, a runny nose, and watery eyes. The dog's reaction, however, usually produces severe, generalized itching. It will chew, lick, or scratch almost any area of the body, including the feet. Chewing and scratching produce hair loss and inflamed areas of the skin. Saliva will stain light colored hair, so dogs that lick excessively will have orange or reddish brown hair. This is often seen on the feet. Although most people think that itching is related to fleas, the most common cause of itching in the dog is inhalant allergy.

What is causing my dog's allergy?

That is not a question that can be answered easily. The itching produced by ragweed allergy is the same as that produced by oak pollen allergy. In other words, an individual animal or person can be allergic to many different things with the end result (itching) being the same. In some cases, allergy testing can make specific determinations, and sometimes an educated guess can be accurate if the itching corresponds with the blooming season of certain plants. However, it is not always necessary to know the specific allergen for treatment to be successful.

What is meant by "seasonal allergy" and "year round allergy?"

As the names imply, some dogs only have allergic reactions during specific periods of the year. Others will itch year round. A year round allergy occurs for two reasons. First, the allergen is present year round. This is the case for indoor dogs that are allergic to house dust mites, also known as "house dust." Second, the dog is allergic to so many things that at least one of those allergens is present at all times.

My dog seemed to have a seasonal allergy for several years, and now it seems year round. Is that possible?

Not only is that possible, it is almost expected. As the dog ages, it usually becomes allergic to more and more things. After several years of acquiring new allergies, it reaches the point that it is constantly exposed to something to which it is allergic.

My dog seems to have a grass allergy. Does that mean it should not walk on grass?

No. Dogs that are allergic to "grass", for example, are really allergic to grass pollen. The blades of grass will cause no harm to your dog. Bermuda grass is the most allergenic grass because it releases so much pollen into the air. Keeping it mowed so it does not pollinate seems logical, but your neighbors must do the same because the pollen is airborne. The same principle applies to trees. Dogs are not allergic to the wood of a certain tree, only to its pollen.

How is inhalant allergy treated?

Treatment depends largely on the length of the dog's allergy season and involves four approaches:

1. **Anti-inflammatory drugs.** 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 the allergic dog 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 antihistamine. When the three of them are combined, most allergic dogs improve significantly. This is a non-specific approach which does not treat the allergy, only the result 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. Some of the hypoallergenic shampoos incorporate fatty acids; these may be absorbed through the skin and offer a localized anti-inflammatory action. The role of the fatty acids in allergy treatment is an area of active research interest in veterinary medicine.
3. **Antibiotics.** Dogs that damage their skin by licking, chewing, and scratching are quite susceptible to bacterial infections in the skin. If this occurs, antibiotic should be given until the infection is controlled. The skin infection itself can be quite irritating and cause a dog to itch even more.
4. **Hyposensitization.** The third major form of allergy treatment is hyposensitization with specific **antigen injections** (or "allergy shots"). Once testing identifies the specific allergens, 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.

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:

Cost: This is the most expensive form of treatment.

Age of Patient: Because many dogs develop additional allergies as they get older, young dogs may need to be retested 1-3 years later.

Success Rate: About 50% of dogs will have an excellent response, about 25% get partial to good response, and the remaining 25% get little or no response. The same statistics are true for people undergoing hyposensitization.

Food Allergies: Although tests for food allergy are available, the reliability of these tests is so low that it is not recommended at this time. A food trial remains the best diagnostic test for food allergy.

Time of Response: The time until apparent response may be 2-5 months, or longer.

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.

My dog has fleas. Couldn't that be causing the itching?

A dog with inhalant allergy will itch even if fleas are not present. However, if fleas are crawling around on your dog, the itching will increase. Although getting rid of all of your dog's fleas will not stop the itching, it will make it much easier to control the itching successfully.

My dog has a terrible odor. Is that related?

There are two possible causes of odor associated with inhalant allergy. These dogs are very prone to ear infections because the ear canal is an extension of the skin. When it becomes inflamed, it is easily infected. These dogs are also likely to have seborrhea.

Sebum is the oily material normally produced in the skin. When a dog scratches, sebum production increases dramatically. This produces a musty odor. A bath will remove the odor, but it is gone for only a few hours. The key to controlling seborrhea is to stop the itching and scratching.

Is there another disease that can be part of my dog's problem?

Yes. Hypothyroidism is a disease in which the thyroid gland does not produce enough thyroid hormone. This has many effects on the body because it controls the rate of metabolism. Hypothyroid dogs frequently have abnormalities of the skin and hair coat. Skin infections (which themselves may increase itching) are common with this hormonal disorder and may aggravate allergic conditions.

How is hypothyroidism diagnosed and treated?

A simple blood test will make the diagnosis in most dogs. However, for some dogs, the thyroid value falls into a "gray zone," and further testing of the thyroid gland is necessary to confirm a diagnosis. Sometimes, illness will cause a dog to have low thyroid values when hypothyroidism is not really present.

Hypothyroidism can be treated with thyroid replacement hormone tablets. Without treatment for this disease, treatment for inhalant allergy is more difficult.

The itching did not stop as expected. What does that mean?

There are two scenarios in which there will be disappointing results. The first scenario is when tablets are given and the response is poor. A few dogs will respond better to injectable steroids than to the oral form. Fortunately, this only occurs about 5% of the time. However, successful management of itching in those dogs will require periodic injections of steroids, if the itching cannot be controlled with other drugs or other forms of treatment.

The other scenario is either a total failure to respond to injectable or oral steroids or a response to an injection is short-lived, lasting only a few days instead of a few weeks. This could occur because the dose was too low; however, it may also mean that the dog has food allergy. Food allergy causes itching and scratching identical to inhalant allergy, but it responds very poorly to steroids. Food allergy is diagnosed with a food trial using a hypoallergenic diet.

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. Prednisone is most commonly used. The specific drug being dispensed for your dog is labeled on the bottle. Give ___ of the ___ mg tablets every other day for three doses (6 days), then ___ tablets every other day for three 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 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 hair coat for 5-10 minutes before thoroughly rinsing the dog.

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