

# Allergies & Atopy in Dogs

There are numerous conditions that cause problems with a dog or cat's skin, but the most common, by far, is allergies.

Allergic contact dermatitis occurs in dogs as a hypersensitivity reaction to certain molecules in the pet's environment.

## Symptoms of allergies

Dogs with allergies may show the following symptoms:

- Chewing on feet
- Rubbing the face on the carpet
- Scratching the body
- Recurrent ear infections
- Hair loss
- Mutilated skin

-A dog who is allergic to something will show it through skin problems and itching, i.e., pruritus. It may seem logical that if a dog is allergic to something he inhales (atopy) like certain pollen grains, he will have a runny nose; if he is allergic to something he eats ([food allergy](#)) such as beef, he may vomit; or if allergic to an insect bite ([urticaria or hives](#)), he may develop a swelling at the site of the bite. In reality, the dog will seldom have these signs. Instead, he will have a mild to severe itching sensation over his body and maybe a *chronic* ear infection.

-In addition, allergic dogs will often chew on their feet until they are irritated and red. They may rub their faces on the carpet or couch, or scratch their sides and belly.

- Because the wax-producing glands of the ear overproduce as a response to the allergy, they get ear infections. Bacteria and yeast often "over grow" in the excessive wax and debris.

-The skin lesions seen in an allergic dog are usually the result of him mutilating his skin through chewing and scratching. Sometimes there is hair loss, which can be patchy or inconsistent over the body leaving a mottled appearance. The skin itself may be dry and crusty, reddened, or oily depending on the dog. It is very common to get secondary bacterial infections of the skin due to these self-inflicted lesions.

## Allergens

When a dog is allergic to something, his body is reacting to certain molecules called 'allergens.' These allergens may come from:

- Trees
- Grass

- Weed pollens
- Fabrics such as wool or nylon
- Rubber and plastic materials
- Foods and food additives such as individual meats, grains, or colorings
- Milk products
- House dust and dust mites
- [Flea](#) bites

### The body's response to an allergen

The reason that all these allergens cause itchy skin is that, simplistically, when allergens are inhaled, ingested, or come in contact with the dog's body, **they cause the *immune system* to produce a protein referred to as IgE. This protein then fixes itself to cells called 'tissue mast cells' that are located in the skin.** When IgE attaches to these mast cells, it causes the release of various irritating chemicals such as histamine. In dogs, these chemical reactions and cell types occur in appreciable amounts only within the skin.

### Genetic factors and time influence allergies

Remember that dogs must be exposed to the allergen for some time before the allergy develops. Exceptions may occur such as an allergy to insect bites, which may develop after only a few exposures.

-The dog's body must learn to react to the allergen. It is a learned phenomenon of the immune system that is genetically programmed and passed from generation to generation in several breeds.  
 - In pets, allergies usually start to develop between one and three years of age. They may start as late as age six or eight, but over 80% start earlier. To make matters worse, as the animal ages, he usually develops allergies to additional things and the response to any one allergen becomes more severe.

## Diagnosing allergies

Most allergies are the inhalant type and are seasonal (at least at first). The dog may be allergic to a certain tree pollen that is only present in the environment for three weeks out of the year, or the allergy may be to house dust mites which are in the environment year round.

A definitive diagnosis of an allergy and determination of exactly what the animal is allergic to can be made in two ways:

1. [Allergy testing](#) (intradermal or blood testing)
2. Eliminating things individually from the animal's environment until the culprit is isolated (this method is most often used when food allergies are suspected)

For example, a dog may start chewing his feet, scratching his sides, and rubbing his face on furniture every year for three weeks during the same month. These are often the signs of a seasonal allergy to something such as ragweed or tree pollen.

- In this case, the veterinarian may choose either tablets and/or a single injection that will suppress the allergy for the 3-4 weeks necessary when that allergen is in the environment.

-After a short treatment period, the animal is back to normal and only has to wait until the following year when will be returned to the veterinarian with the same problem.

## Treating allergies

### Avoidance

This can be a very important part of managing atopy. While it may be impossible to completely eliminate all of the offending agents, many can be reduced with minimal effort on the part of the owner.

- For avoidance therapy to have any benefit, the offending agents must be identified through intradermal skin testing. Avoidance is rarely a complete treatment in itself, but is used in conjunction with other treatments.

Allergen	Avoidance Suggestions
House dust	Keep pets out of room several hours when vacuuming Change furnace filters regularly
House dust mites	Use a plastic cover over pet's bed Wash bedding in very hot water Avoid letting pets sleep on stuffed furniture Avoid stuffed toys Keep pets in uncarpeted rooms Run air conditioner during hot weather Change furnace filters regularly
Molds	Keep pets out of basements Keep pets indoors when the lawn is mowed Avoid dusty pet foods Clean and disinfect humidifiers Use dehumidifiers Avoid large numbers of houseplants
Pollens	Keep dogs out of fields

	<p>Keep grass cut short Rinse dog's feet off after dog has been outside Keep pets indoors during periods of high pollen counts</p>
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### Topical therapy

-Topical therapy consists of shampoos and rinses and topical anti-itch solutions. Topical therapy offers immediate, but short-term relief. It is often recommended to bathe recommend atopic dogs at least once every two weeks with a hypoallergenic shampoo or colloidal oatmeal shampoo. Hydrocortisone shampoos may also be used.

-Weekly or even twice weekly shampoos may offer increased relief for some dogs.

-In addition to bathing, it is helpful to simply wash off the dog's feet after he comes in from the outside. This will remove any allergens from his feet.

-**Topical solutions containing hydrocortisone may offer some relief.** They are the most practical in treating localized itching. These products are very poorly absorbed into the bloodstream, and when used in moderation, do not create long-term side effects or problems associated with injectable or oral steroids.

- In addition, cooling salves and lotions may also be used.

- Care must be taken with these to ensure that they do not make the coat too greasy.

- Dogs may tend to lick off these preparations. After applying these preparations, it is recommended to get the dog involved in some activity to prevent him from licking the treated area.

### Immunotherapy (Hyposensitization)

**Immunotherapy** has been described as the mainstay of treatment for canine atopy. It is indicated in animals where the avoidance of antigens is impossible, symptoms are present for more than 4 to 6 months out of the year, **and fatty acids and antihistamines do not provide satisfactory results.**

An animal must undergo intradermal skin testing prior to hyposensitization. After the antigens to which the animal is allergic have been identified through testing,

- a commercially prepared injection containing the altered antigens is injected into the dog. Depending on the type of product used, a series of weekly or monthly shots are given. The animal then becomes de-sensitized to the offending allergens.
- Success is as high as 80% with this treatment plan.
- Treatment is time consuming and requires a dedicated owner and veterinarian. This treatment is an excellent option in severe cases of atopy, especially in young dogs. If you have an allergic pet that is not responding to conventional treatment, seriously consider this as a treatment option.

## Omega-3 fatty acids

Fatty acids have been recommended for years to improve coat quality and shine. Recently, new research has shown that certain fatty acids - the omega-3 fatty acids - are also very beneficial in the management of allergies in dogs and cats.

- Omega-3 fatty acids work in the skin to help reduce the amount and effects of histamine and other chemicals that are released in response to allergies. Not every allergic pet responds to omega-3 fatty acids. Some pets show improvements, others have a complete cure, and others show no change after being on the omega-3 fatty acids.
- Most pets need to be on the omega-3 fatty acids daily for several weeks to months to notice significant improvement. Omega-3 fatty acids are very safe and have very few side effects.
- Studies show that when omega-3 fatty acids are used in conjunction with other treatments, such as antihistamines, the use of steroids can often be decreased or discontinued.
- Be sure to use an omega-3 fatty acid supplement derived from fish oil. Other types of fatty acids (such as omega-6 fatty acids) can actually make some allergies worse. It is often best to use the omega-3 fatty acid supplements in conjunction with a diet lower in fat.

## Biotin

-is one of the B vitamins. Several studies have shown that dogs suffering from dry skin, seborrhea, and dry, itchy allergic skin greatly improved when supplemented daily with biotin. Biotin is often used in combination with fatty acids to treat dogs with allergies.

-Biotin is very safe and there are no side effects or toxicities. Biotin may be found as a supplemental powder containing just biotin, or

-as a supplement such as brewers yeast, which contains other ingredients.

## Antihistamines

Antihistamines are widely used in both the human and animal medical fields. Most of the antihistamines used in veterinary medicine are antihistamines that were designed for and used primarily by humans. **Antihistamines have been shown to be effective in controlling allergies in up to 30% of dogs and 70% of cats.** When used as part of a treatment plan including fatty acids and avoidance, the percent of respondents goes much higher.

-Every animal will respond differently to each of the different antihistamines. Every antihistamine has a different dose and risk of side effects.

- Some common side effects include sedation, hyperactivity, constipation, dry mouth, and decreased appetite.

-For severely itchy dogs, mild sedation may be a positive and desired side effect.

Antihistamines come in several forms including H1 and H2 blockers. While the H2 blockers There are many different H1 antihistamines available on the market, but veterinary use is usually restricted to the following.

Antihistamine	Trade Name	Possible Side Effects
Diphenhydramine		dry mouth
Hydroxyzine		no dosage for cats
Clemastine fumarate		dry mouth
Chlorpheniramine	Chlor-Trimeton	Lethargy, diarrhea

## Cyclosporine

Cyclosporine, in the form of the brand name drug Atopica, is being used very successfully in the treatment of atopy in dogs, especially those with severe allergies. The most common side effects are diarrhea and vomiting. It does not work immediately, but may take 3-4 weeks to see an effect. It may be used for short periods of time for seasonal allergies, or can be given long-term for year-round atopy.

## Steroids

Steroids are extremely effective for relieving severe itching and inflammation. The problem is that they can have many short and long-term side effects, if not used correctly. If used correctly, they can be as safe as any other drug that we use.

- They are usually reserved as one of the last lines of treatments,

Steroids are usually administered in one of two forms, injectable and in tablet form. The steroids being discussed here are *corticosteroids* and are not the *anabolic steroids* used by body builders.. There are many different forms of corticosteroids currently available on the market. They vary widely in their duration of activity and strength.

**-Injectable:** Injectable forms of steroids include **betamethasone, dexamethasone, flumethasone, methylprednisolone, and triamcinolone**. These agents are usually given *intramuscularly* and have between one week and six months duration depending on the product, the dose, and the individual animal.

**Oral:** The affected animal usually begins with daily therapy for a period of three to five days, and then the dose is reduced to every other day dosing.

-If the animal needs to be treated for more than a couple of weeks, then the dose is halved weekly until a minimum therapeutic level can be established. The goal with all steroids is to use the minimum dose necessary to alleviate the symptoms. By taking this approach, the side effects are eliminated or reduced.

**Side Effects:** The potential side effects associated with steroid use in dogs are numerous. Side effects can appear with any duration or form of steroid therapy. Each animal responds differently to each type of treatment. However, the number and severity of the side effects are very closely related to dose and duration of treatment. Most of the side effects associated with minimum effective dose short-term therapy are mild and resolve once therapy stops. The most common symptoms include **increased water consumption, increased urination, increased appetite (weight gain), depression, hyperactivity, panting, and diarrhea**.

Long-term use has the risk of creating more permanent and severe damage. **Some high dose, long term side effects include increased incidence of infections, poor hair coat and skin, immunosuppression, diabetes mellitus, adrenal suppression, and liver problems.**

-Several studies have shown that if fatty acids and antihistamines are used concurrently with steroids that the amount of steroids needed to offer relief is greatly reduced.

## Food Allergies

-The treatment for **food allergies** is avoidance. Once the offending ingredients have been identified through a food trial, then they are eliminated from the diet.

- Short-term relief may be gained with **fatty acids**, antihistamines, and steroids, but elimination of the products from the diet is the only long-term solution.

## Contact Allergies

Contact allergies are not very common in dogs and cats. They are usually detected through scratch testing and avoidance. The best treatment is avoidance. If that is not possible, then fatty acids, antihistamines, biotin, and topical shampoos can be used to control the itching.

-Because the allergic dog's feet become inflamed and itch, many owners think their pet has contact allergies from the grass, carpet, etc., when in reality, they are probably suffering from atopy or food allergies.

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## Allergic & Irritant Contact Dermatitis

Allergic contact dermatitis occurs in dogs as a hypersensitivity reaction to certain molecules in the pet's environment.

Irritant contact dermatitis results when the skin is exposed to noxious substances in the environment. The symptoms and biologic mechanisms involved in these two diseases are similar so they are often discussed together.

### What is allergic contact dermatitis

Allergic contact dermatitis is a rare disease, which occurs when an animal's skin overreacts to certain small molecules in the environment. Substances, which can cause allergic contact dermatitis include certain antibiotics applied to the skin; metals such as nickel; materials such as rubber or wool; and chemicals such as dyes and carpet deodorizers.

### What is irritant contact dermatitis

Irritant contact dermatitis occurs when the skin is exposed to severely irritating chemicals such as the sap in poison ivy and salt on the road.

### How do these two diseases differ

-Allergic contact dermatitis only affects those animals with a hypersensitivity to the molecule.

- Irritant contact dermatitis would affect every dog that is exposed to the irritant. Allergic dermatitis requires multiple exposures to the molecule before it develops. It rarely occurs in animals less than two years old. Irritant contact dermatitis often occurs in inquisitive young animals who get into things they should not.

## **symptoms of allergic and irritant contact dermatitis**

Lesions generally occur on the areas of skin that are sparsely haired and directly exposed to the offending molecules. This often means the back of the paws, abdomen, muzzle, and lips. The affected areas are very red, have small bumps or vesicles (blister-like lesions), and itch. In irritant contact dermatitis ulcers may appear.

## **allergic and irritant contact dermatitis diagnosed**

The history and physical exam can often indicate what is going on. To isolate the allergen (molecule that caused the dermatitis), exclusion trials are often performed. In these trials, the animal is restricted to an uncarpeted room and kept off the grass, for instance. If the animal's condition improves, potential allergens are slowly introduced one by one.

A **'patch' test** can also be performed. In this test, a small amount of the allergen is rubbed on the skin, or a gauze pad containing the suspected allergen is bandaged on the pet's skin. The skin is monitored for 2-5 days for a reaction.

## **allergic or irritant contact dermatitis managed**

The key to managing this condition is removing or restricting exposure to the allergen or contact irritant in the pet's environment. **If that is not possible, then fatty acids, antihistamines, biotin, and topical shampoos can be used to control the itching.**

-As a rule, for any pet suspected of having an allergy problem that could include an allergic contact component, we recommend:

- As a rule, for any pet suspected of having an allergy problem that could include an allergic contact component, we recommend:

- Glass or stainless steel food and water bowls, cleaned and rinsed well daily
- Hypoallergenic detergents for the pet's bedding
- Routine hypoallergenic shampoos for the pet to remove any allergens
- Restricting walking to sidewalks or paved surfaces - avoid grass