

# ATOPIY: ALLERGY TO ENVIRONMENTAL SUBSTANCES

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**CAN PETS REALLY HAVE ALLERGIES?** Yes. Allergies are just as common in dogs and cats as in people – up to 27% of dogs are affected, as well as 1 in 10 cats. Some breeds of dogs are more prone to allergies than others. Environmental allergy, called atopy, is the most common form.

**HOW DO PETS SHOW THEIR ALLERGIC SYMPTOMS?** Unlike people, whose symptoms of hay fever involve the eyes, nose and throat, symptoms in dogs and cats usually involve the skin. Itchy face, feet, and ears are the most common signs. Itching, redness and hair loss can eventually spread to the entire body.

When pets itch they either lick, bite or scratch at the affected area. Licking or nibbling at the feet and toes are the most common symptoms in dogs, along with head shaking, ear scratching and frequent ear infections. Cats may groom themselves excessively, leading to bald spots, or they may scratch themselves bloody. In short, being allergic is miserable for your pet!



**WHAT CAUSES PETS TO HAVE ALLERGIES?** The tendency to develop allergies is inherited, which is why some breeds are more prone than others. Once your pet develops an allergic sensitivity to a substance, he or she will be allergic to it for life. Any time exposure to the substance occurs, an allergic reaction is triggered and symptoms appear. Common allergens (substances which trigger allergies) include pollens, mold and mildew spores, dust mites and wool. Dogs and cats can also develop allergies to foods and to substances they lay on or what otherwise contact the skin. These forms of allergy are less common.



**WHEN DO THESE REACTIONS DEVELOP?** Allergy symptoms typically begin to appear at 2-3 years of age. Once the immune system is sensitized, the reaction itself can begin within a few minutes of exposure to the allergen. Most pets are allergic to more than one thing. Pollen allergies often wax and wane with the seasons. Allergies to substances present in the home, like dust mites, molds and mildews, are more likely to be year round. Allergies gradually worsen with time. Unlike atopy, food and contact allergies can begin at any age.

**WHAT IF MY PET GOES UNTREATED?** The inflammation and itching lead to licking, biting and scratching. This can cause severe skin damage. Infection, either bacterial or fungal, can then set in. Not only is the allergic reaction very uncomfortable for your pet, but it leads to other problems as well.

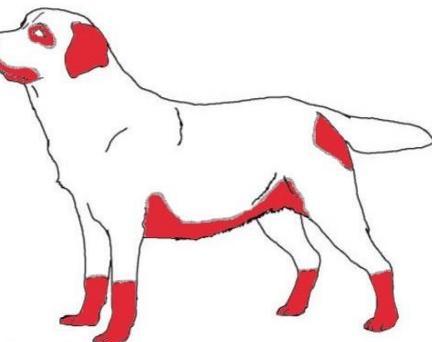
**HOW CAN I TELL IF MY PET IS ALLERGIC?** Some cases are easier to diagnose than others. Skin mites, ear mites, flea allergy and many other problems can show similar signs. Sometimes the secondary problems such as skin infection are severe enough to mask the underlying allergy problem. Your pet's doctor will need a detailed history of your pet's symptoms, including such things as: age at onset; seasonal occurrence; first signs of trouble; subsequent signs; and any correlation between the sensitivity and the amount of the exposure to various allergens.

The areas usually affected provide the biggest clue as to whether symptoms are due to atopy versus some other cause. Licking the feet, rubbing the face and repeated ear infections are usually the first signs noticed. During the first year or two, symptoms may be mild or subtle and are often missed by pet owners.

Usually, the first experience with inhalant allergies corresponds with plant pollination - ragweed is a very common allergen in dogs just as in people. In time, however, seasonal patterns may be lost as the patient becomes sensitive to dusts and other materials.

Observations of flare-ups will help to determine which allergens are important.

Recent research has led to a change in our thinking about the way dogs actually are exposed to the substances that trigger allergy symptoms. For years it was assumed that it was inhaling these substances that was the most important factor in triggering allergies because that is what triggers hay fever in humans. We are now coming to understand that this is not the case. The primary route for allergens to enter the body and trigger the immune system in dogs is actually through the skin itself.



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If you wipe your allergic pet down with a wet cloth at least daily, paying particular attention to the feet, armpits, groin and underbelly you can often make a significant difference in your pet's comfort level. Don't use the same cloth every day without washing it or you will be rubbing allergens you removed previously back onto the skin.

Inflammation from allergic reactions damages the skin barrier, the layer of cells and oils that prevents the outside world from invading under the skin. Once the skin is unhealthy, it is permeable to allergens and this becomes the primary route of exposure. This means we are focusing a lot more on bathing, therapeutic shampoos and fatty acids than we used to. The idea is to physically remove allergens from the pet's body so they cannot penetrate the skin, and to try to restore the lipid (oil) barrier that helps keep the skin moist and healthy.

Frequent bathing of dogs with allergic skin disease helps to limit infection with yeast or Staph. bacteria. These organisms can colonize damaged skin and result in skin infection on top of the allergy itself. Bathing or spraying with chlorhexidine helps by killing and physically removing yeast and bacteria from the skin. Prescription medicated shampoos contain antihistamines, fatty acids and other ingredients that reduce itching and help normalize damaged skin. Using these products is more difficult in cats but some will tolerate these same treatments.

**If allergies seem well controlled for a time and then worsen we will want to see your pet and re-evaluate the symptoms and our treatment plan.** Often there is more going on than just the allergy itself. Scabies mites are very common in the Midwest and can cause intense itching.

Secondary yeast and bacterial infections are common as well. We will need to check for these and treat them along with the atopy itself in order to get your pet comfortable again.

**CAN I USE BENADRYL FOR ATOPY?** Oral antihistamines work poorly in dogs and cats. Pets don't produce very much histamine for antihistamines to work against. Antihistamines also don't penetrate skin cells very well, whereas they can be absorbed easily into the cells that line the nose and throat. Most of the effect of antihistamines in dogs is actually due to the fact that they make them drowsy and less likely to scratch or lick at themselves. We now know the actual effect on the skin inflammation is no better than a placebo. Antihistamines and fatty acids do help to reduce the amount of steroid necessary to control the itching, however, and this can reduce medication side effects from the steroids.

**WHAT ABOUT STEROIDS?** Steroids such as prednisone, methylprednisolone and triamcinolone work very well for severe allergy symptoms and short term use. Because of side effects and the tendency for their beneficial effects to wane with time we try to not have dogs taking these drugs long term. We have several other types of medications we can use instead, including Cytopoint, Apoquel and immunotherapy.

**WHAT CAN BE DONE TO GIVE MY PET RELIEF?** Atopy is a disease that cannot be cured, and it can be difficult to manage. Diagnosis is based on history, clinical signs and exclusion of other diseases with similar symptoms. Dogs may have parasites such as fleas or mites, and they often have food allergies as well. They frequently experience recurrent skin and/or ear infections which can also complicate the issue. Successful long-term management of atopic dermatitis often requires a combination of therapies (topical & systemic) used together.

**1) Avoidance:** This, unfortunately, is not always possible. Three hundred miles out on the open ocean there are still pollens in the air! However, pets with allergies do best in homes with air conditioning, which filters the air and means more closed windows. They also do better with wood or tile floors that catch less dust than carpeting. Feathers, aerosols and smoke are examples of things that can be avoided. Wool rugs and blankets are a common culprit with pets who commonly experience itching and infection on the hairless areas of the abdomen.

**2) Apoquel™ & Zenrelia™:** There are several types of chemical messengers involved in allergic reactions. These are called cytokines. One type of cytokine is histamine. Histamines are the big players in humans, so antihistamines work well in humans. Dogs don't make as many histamines as people do so antihistamines don't work as well. Instead, dogs make other inflammatory chemicals. Apoquel and Zenrelia are medications that block the receptors for other cytokines. Apoquel blocks JAS1 & JAS3. Dogs that have the genes that program for these two cytokines, JAS1 and JAS3, should have significant relief in allergy symptoms after a few days of Apoquel. Dogs that produce JAS2 instead will not get better on Apoquel.

Zenrelia blocks JAK1, JAK2 & TYK2, so a different pathway to itching and inflammation than Apoquel. Some dogs do great on Apoquel but others respond better to Zenrelia.

The idea is to try Apoquel for 1-2 weeks to see if it works. If it does, it can be used for an entire allergy season with low risk for side effects. When it works, it should be much more effective than antihistamines usually are for dogs. If it doesn't help, we will recommend Cytopoint or Zenrelia. Zenrelia interferes with vaccine immunity, so we are more selective in prescribing it. It's not the first thing we reach for.

**3) CADI:** This stands for Canine Atopic Dermatitis Immunotherapeutic. CADI is an injection, brand name **Cytopoint™**, that binds to a certain type of itch receptor, preventing the itch sensation from being triggered by whatever the pet is allergic to. It's a very safe product because it's not a drug. It's a natural peptide with no side effects. It is extremely effective for reducing itching, though it doesn't reduce redness or swelling. A single injection lasts 1-2 months.

**4) Topical therapy:** As discussed above, we can apply chlorhexidine to reduce secondary infection in the skin. We can also apply steroids and fatty acids directly to the skin instead of or as well as using these orally. Topical steroids can provide itch relief with less risk for steroid side effects. Shampoos, cream rinses and mousses containing anti-itch ingredients may also be helpful. In warmer months, wipe your pet's feet every time he or she comes indoors, to remove as much pollen as possible.

**5) Fatty Acid Supplements:** Omega 3 fatty acids are very helpful for some pets, providing anti-inflammatory effect. Even if you don't see a lot of improvement from them in and of themselves, they often help enough that we can reduce the dosages of more expensive medications. This saves both money and undesirable side effects. Fatty acids come in capsule or liquid form. The dosage needed to control itching is fairly high, please see the chart on our supplements handout. Prescription pet foods made for skin problems have good Omega 3 levels.

Be aware that all fatty acid supplements are not created equal. Salmon oil and coconut oil are popular right now but they contain Omega 6 fatty acids, which actually worsen itching, instead of the anti-inflammatory Omega 3 kind. Flax seed oil is a good source of Omega 3's in people but dogs and cats lack the enzyme needed to digest it, so flax is useless for pets. We have a handout with a dosage chart for EPA and DHA, the Omega 3 fatty acids that we want, so you can choose a product that will be helpful instead of making things worse. Special therapeutic diets, such as Hill's Derm Defense, contain other skin nutrients along with extra OM3 and can reduce itching and secondary skin infections.

**6) Atopica™/cyclosporine:** Cyclosporine is an immune-modulating drug that works differently than corticosteroids. It is effective at reducing allergy symptoms in 60-80% of patients, and can be used along with or instead of other allergy treatments. Its main drawback was cost, especially for large dogs, but there are now less expensive human generic forms we can use. The other issue is that cyclosporine takes weeks to gradually become effective. It is not a drug that provides immediate relief of symptoms. For seasonal allergies, we do a trial to see if it works and then we try to start the pet on it a few weeks before their itchy season starts.

**7) Hypoallergenization:** We've saved the best for last. Also known as immunotherapy, hypoallergenization is considered the most successful and safest approach to life long management of severe atopy. It is used when a patient's allergies span the seasons or are year round; when symptoms are not controlled by reasonable amounts of medication; when allergies start at a young age and get rapidly worse; or when corticosteroids cannot be used for other health reasons. Allergy testing is first done, via blood or skin tests, to determine what substances the pet is allergic to. Then the pet is given immunotherapy injections or oral drops by the owners at home to override the allergy response to those substances.

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Hypoallergenization is effective about 80% of the time but it can take months for it to gradually become effective. Both the testing and the medication are fairly expensive as well, so immunotherapy requires a commitment on the part of the owner.

In humans it has been shown that immunotherapy can actually alter the course of allergy development. Ordinarily, allergies slowly worsen with time. The younger a dog is when symptoms become obvious and the more severe those symptoms are the more likely we will recommend hypoallergenization because when started early we can prevent the symptoms from becoming as severe. In other words, if your pet is itchy year 'round, and especially if he or she is young, immunotherapy is best.

It has been shown that immunotherapy will have a greater likelihood of success if it is started earlier in a patient's life. The longer therapy is delayed, the higher the risk for an incomplete response and the higher the likelihood for frustrated owners. Given its low risk for

long-term adverse health consequences and the ultimate success with utilizing it, immunotherapy is considered the preferred treatment in all young canine patients with non-seasonal allergies.

Older patients will often benefit from immunotherapy too, usually in conjunction with other treatments. Case management is one of the key factors that will impact success with immunotherapy. Reported success is higher for patients that receive a customized immunotherapy protocol. This means we will talk with you often to adjust the dose and frequency of allergen administration to fit the pet's response to treatment.

Immunotherapy requires time to start working; while the majority of patients will respond within a few months, it can take others up to 9-12 months to improve. During this initial period, other medications may be used along with immunotherapy to help pet owners manage their pet's symptoms, with the goal of discontinuing these medications in the future. Overall, immunotherapy is considered the most successful and safest way to manage canine atopic dermatitis for the life of the patient.

**WHAT IS THE BEST COURSE OF THERAPY FOR MY PET?** Therapy varies widely from patient to patient. A good working relationship between the pet owner and the veterinarian is needed to find the treatment regimen that works the best for particular dog or cat. There are so many different treatments available, and so many complicating factors such as fleas and bacterial infections, that there is no one best way to treat atopy.

**Please call if you have any questions about your pet's allergies, or if you think he or she is not responding**



**Watch our video about allergy treatments!**

<http://www.youtube/aUQGPhQ-sSU>

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