

Health Care Focus

# Allergies

*Specially prepared for:*



Pebble Creek • Temple Terrace • North Bay • All Creatures • Cheval • Cat Doctors

Overall, your pet appears to be in good general health based on examination. Please see the examination and health care report card your vet has supplied for details on any abnormal examination findings. Based on your pet's examination and consultation, the following has been chosen by your Veterinarian as your pet's health care focus.



## Allergies

An Allergy is the body's immune system overreacting, or being hypersensitive, to a substance called an allergen.

Allergens are proteins from sources such as plants, molds, insects, other animals, or foods. The immune system's normal function is to protect against infection and disease. In the event of allergies, the immune system starts to mistakenly recognize an allergen as a threat and reacts to it. Allergies are not generally something a pet is born with. Instead, it is something that develops over time as the immune system is exposed to an allergen on multiple occasions until it becomes sensitized to the allergen. Because of this, something a pet was not allergic to earlier in life can become an allergy as they age.

The immune reactions involved in allergies are quite complex. Most reactions involve an immune system antibody in the blood called Immunoglobulin E (IgE). In an allergic reaction the IgE antibody combines with an allergen protein (also known as an antigen) and then attaches to a type of cell called a mast cell. Mast cells are found in many tissues throughout the body. When the antigen and antibody react with mast cells, the mast cells break up and release potent chemicals such as histamines that cause local inflammation such as redness, swelling and itching. This inflammation causes various signs associated with an allergic reaction.

The allergy pathway in dogs has been found to be even more complicated than the factors of IgE and histamines alone. For example, IL-31 is an important protein involved in the immune system response that participates in sending itch signals to the brain. And there are enzymes present in their skin that serve to trigger the sensation of itch as well. As research has expanded the knowledge of these pathways, recent medications have been developed to help block the sensation of itch. Although allergy pathways in cats are less well known, it is likely that they have pathways specific to their species as well.

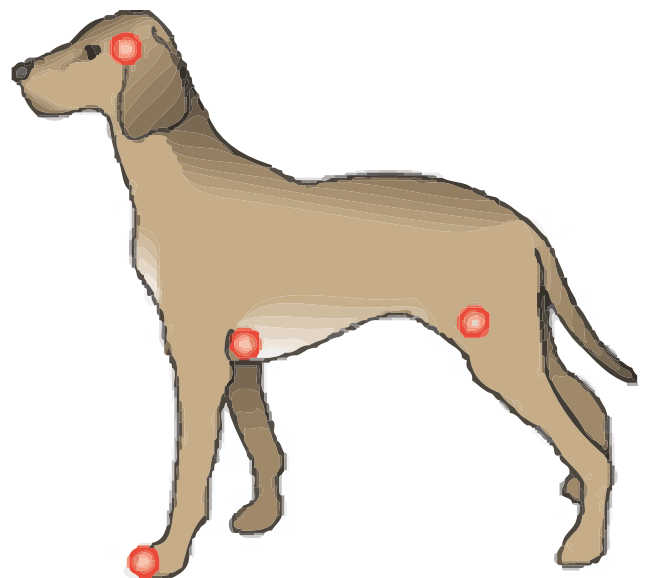
Allergies are quite common in dogs and cats of all breeds and backgrounds. Most allergies will appear after the pet is 6 months of age with the majority of pets being over the age of 1 or 2 years. Some allergies are thought to be inherited.

## Signs of Allergies

**The most common sign associated with allergies is itching of the skin, either localized (in one area) or generalized (all over the body).** Itching can be manifested

by licking, chewing, rubbing against objects, and/or scratching. In cats it is often manifested as "over grooming". Some dogs will excessively lick or chew at their feet as this is a common location for itching related to allergens in the environment. Cats that over groom will often get shortened hairs or loss of hair in certain regions. In light colored dogs who lick excessively they often get brown stains on their fur from a pigment in their saliva.

Allergies lead to a break down in the skin's barrier. The skin's barrier serves to keep out infection and maintain proper hydration at the skin surface. The loss of this barrier therefore can lead to secondary skin infections and sometimes dry and flaky skin. Infections related to allergies can also occur within the ears. With certain infections, the hair coat can become dull and dry or greasy and oily. Infections can also lead to malodor of the skin and hair coat that cannot be remedied with a normal bath, and/or malodor and discharge within the ears that cannot be



remedied with an ear cleaner.

Some allergies can affect the respiratory tract and lead to signs such as coughing, sneezing, wheezing, and/or runny discharge from the eyes or nose.

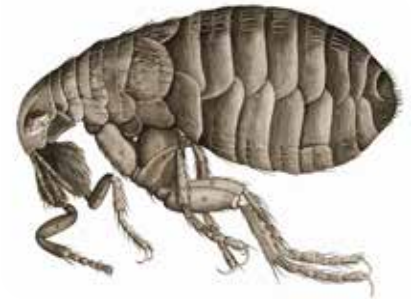
Some allergies, in particular food allergies, can involve the digestive system and result in vomiting and/or diarrhea.

## Types of Allergies

The primary allergies in dogs and cats can be divided into the categories outlined below. They are listed in order from most to least common. **It is possible for an individual pet to have a combination of these allergies.**

### 1. Flea Allergy Dermatitis (FAD)

Flea allergy dermatitis is an allergic response to the saliva of fleas. Most pets experience only minor local irritation from flea bites. However, a pet with FAD will react to a single bite with severe itching. Pets with this allergy will bite and scratch themselves excessively and may remove large amounts of hair, especially in the tail-base region or the “flea triangle”. The flea triangle may best be thought of as the pants region, which is basically the areas that would be covered by pants, if pets wore pants- the lower back, tail base, and hind limbs.



Secondary bacterial infection may develop in the areas of broken skin leading to scabs, increased inflammation, increased irritation, and increased itching.

Pets can have other insect bite allergies as well including blackflies, deerflies, horseflies, mosquitoes, ants, bees, ticks, and spiders. Fleas are by far the leading cause of insect allergy for pets.

**Because even a single flea can be a problem for a pet with FAD, strict flea control is essential.** Failing to prevent or control flea bites adequately or failure to acknowledge the possibility that fleas can be affecting a pet will lead to failure to control skin problems in pets with FAD.

### 2. Atopic Dermatitis (Atopy)

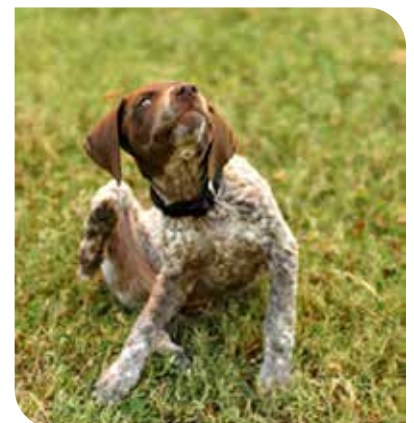
Atopy is basically allergies to things in the environment. It is sometimes referred to as “Inhalant Allergy”. Environmental allergens can include, but are not limited to tree pollens (cedar, ash, oak, etc.), grass pollens, weed pollens, molds and mildews, and dust mites. While in people, inhalant allergies usually manifest as upper respiratory signs (runny eyes and nose, sneezing or “hay fever”), in our pets they usually manifest with skin problems (itchy skin, secondary infections, abnormal hair coat and skin appearance).

Many of these allergens occur seasonally therefore a pet may only become affected during certain times of the year. Others, however, occur year round.

### 3. Food Allergy

Food allergies can develop to almost any protein or carbohydrate component of food but most commonly occurs to protein from animal sources. The most common food allergies in dogs, in order from most to least common, are chicken, beef, dairy, and eggs. The most common food allergies in cats include beef, dairy, chicken and fish.

**Grain allergies are very uncommon in dogs and cats.** With the discovery of grain allergies in people, there has become a widespread myth that grains in pet food cause them to be itchy or are the main source of allergies. This is not true. In fact, of the pets that suffer from allergies, only 10% of them have food allergy and of those pets, less than 1% will be allergic to grains.



**Food allergies develop over a period of time as the body is continually introduced to a substance therefore pets develop allergies only to food products they have eaten before.** That means your pet can eat a particular food for an extended period of time with no problems however develop signs of allergies to the food later.

Food allergy may lead to any of the skin or ear signs previously discussed as well as digestive disorders (vomiting and/or diarrhea).

## Diagnosis

It can be a complete guessing game to try to figure out on your own what allergens your pet may be allergic to and a veterinarian cannot tell what your pet is allergic to just by examining them. Flea allergies may be suspected by a veterinarian based on the presence of fleas or pattern of hair loss, however flea allergies can still be affecting your pet even if fleas are not observed. Also, as outlined above, many pets have more than one allergy. **Allergy testing +/- food allergy trial is the only way to determine what your pet is allergic to.**

## Environmental Allergy testing is available in 2 forms:

### 1. Intradermal (skin testing)

Intradermal testing is generally only available through Dermatologists. Dermatologists are veterinarians that have a specialty degree and specialize in skin problems in pets.

This testing consists of a series of superficial needle pricks into the skin on the abdomen. The material present on each needle contains a possible allergen. After a designated amount of time, the sites are evaluated in order to determine if there is a local allergic response. If there is a local response in that individual location, then it is determined that this is an allergen for the pet.

### 2. IgE blood testing

For this test your veterinarian collects a blood sample that gets sent to a lab for testing. The test measures blood IgE antibodies for different allergens that are common in the area of the country where you live. If the IgE antibodies are above a certain level, that shows that your pet is allergic to that allergen.

After allergy testing, the pet should be protected from exposure to sources of their allergies as much as possible. Because most of these allergens are environmental, this is difficult and recurrent bouts are likely.

If testing is "positive" for allergies, your veterinarian can order immunotherapy injections (commonly called "allergy shots"). Allergy shots consist of a series of injections that are given under the skin. These injections typically start as multiple times weekly and over time may decrease in frequency. The injection contains the allergens that your pet is allergic to. In the beginning, the injections contain very small amounts of these allergens and over time the amount of the allergens increase. This serves to "immunize" your pet against these allergies so that the body starts to recognize the allergens as familiar and over time will stop overreacting to them.

Sublingual Immunotherapy drops are also available. These work very similarly to the injections described above however they are placed under the tongue daily.

Symptoms of atopy can be controlled with immunotherapy but a permanent cure is not usually possible.

**There are both pros and cons to allergy testing. These are outlined below.**



## Pros:

1. Immunizing your pet with allergy shots over time against their known allergens can potentially eventually eliminate the need for life-long allergy medications
2. Knowing what your pet is allergic to may help you to avoid their exposure to such allergens

## Cons:

1. It is not possible to test for every potential allergen in the environment. The allergens tested for will be the most common allergens for pets living in your area. If you relocate to another area then exposure to potential allergens may change. Also, your pet may still react to allergens that weren't or can't be tested for therefore response to immunotherapy may not be 100% effective.
2. Your pet may develop additional allergies over time. Immunizing your pet against allergens that they are reacting to now will not prevent them from developing additional allergies in the future. For this reason, allergy testing may need to be repeated more than once during a pet's lifetime.
3. Food Allergies cannot be tested on skin testing because these allergens have to be ingested to elicit a response. They also cannot be detected on blood testing because the allergic response to these allergens does not involve IgE. **Food Allergy can only be diagnosed through what is known as an Allergy Food Trial.**

## Allergy Food Trial

Food allergy typically does not respond well to medical treatments alone. Treatment requires identifying the offending component(s) of the diet and eliminating them. The most accurate way of testing for food allergies is with an elimination diet trial using a hypoallergenic diet. **Because it takes at least eight weeks for all other food products to be eliminated from the body, the dog must eat the special diet exclusively for eight to twelve weeks.** If a positive response and improvement of your pet's symptoms occur, 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 flavored vitamins or medications must be discontinued during the testing period. This is because if your pet is exposed to a potential food allergen, even once or even in a tiny amount, then they will react to that allergen and it will make the food trial appear as though it is not working. There may also be interference with certain types of flavored chewable tablets or medications such as certain heartworm preventatives. Your veterinarian will discuss the specific diet and restrictions recommended for your pet.

**It is important that you feed a food selected by your veterinarian instead of attempting to choose an over the counter food on your own.** This is because many over the counter foods that claim to be low allergen or allergen free are not. Unfortunately, as the pet food industry is not well regulated, pet food brands can make inaccurate claims on their labels. When looking through ingredients on the labels of these over the counter "allergy foods" it is common to find that the food still contains potential allergen ingredients such as chicken by-product, bone meal, or eggs.

## Treatment and Management

Management of allergies often requires multiple types of therapies. This is because a pet may be suffering from multiple causes as well as multiple symptoms of their allergies. In addition, specific therapies may need to be added or adjusted over time if flare ups occur.

### 1) Flea Prevention

Fleas are a threat year round in Florida. Even if you do not see fleas on your pet, it does not mean they are not attacking. Some cats are also flea allergic and can have severe skin reactions to even a single flea bite. Fleas are great at hiding and by the time you notice a flea on your pet there are likely already up to 1 million eggs in your house waiting to hatch out!!! Fleas can live in cocoons in the environment for up to a year or longer and nothing kills fleas when they are inside of their cocoons. This makes it even more difficult to rid a house of fleas once they are present.

Fleas also transmit diseases such as blood-borne parasites, bacteria, and, in some severe cases, lead to anemia (low red blood cell count due to blood loss from fleas feeding on a pet's blood). Some cases of anemia require emergency care and blood transfusions.

Even if your pet spends little to no time outside they are at risk of getting fleas. Fleas seek warm blooded creatures and quickly target animals. They can also easily get into cracks under doors or even make their way inside on your shoes, socks, or pants. They prefer animals to people so you may not even know they are there as they are feeding on your pet and not you. During part of their life cycle they live as tiny (almost microscopic) maggots. They don't just live in carpet either- they live in cracks of floors like tile and wood and in folds, creases, and fibers of furniture including sofas and beds. Treating the environment can often require multiple treatments from exterminators and personal home treatments. Some chemicals used to treat the environment can carry risks to humans and animals.

Prevention is key!! Prescription strength preventatives are best (available through a veterinarian) as most over the counter products are not strong enough to effectively kill and prevent fleas. Some over the counter products can also be irritating to your pet's skin. **Some flea preventatives used in dogs are deadly in cats so never use a preventative for dogs on your cat.** Flea baths and some flea collars are also not adequately effective and may be irritating to your pet's skin.

There are lots of myths on the internet regarding what you can do at home to prevent or get rid of fleas. These include the use of garlic and other substances which can actually be toxic in pets, and use of dawn dish detergent. Bathing may temporarily wash some fleas off of your pet however since there are fleas in the environment they are going to resume being affected by fleas as soon as you are finished with their bath.

Recommended preventatives available include combination flea and heartworm medications such as Trifexis and Sentinel (oral), Revolution (topical). Flea-only products that are recommended include Comfortis and Bravecto (oral) and Activyl (topical). Topical medications are applied to the skin therefore dogs or cats that receive frequent bathing may benefit most from an oral medication as bathing can reduce the effectiveness of topical preventatives.

## 2) Environmental allergy control

There are several medications available that are currently recommended for management of environmental allergies (Atopy). These are listed below. Your veterinarian will counsel you on which treatment they feel is best for you and your individual pet.

### a. Apoquel

This is an oral medication that is given once to twice daily and serves to break the cycle of itching and inflammation when a pet is exposed to allergens or is already suffering the symptoms of allergies. It does this by blocking specific enzymes that are involved in the allergy and itch pathway.

This medication is approved for dogs only.

### b. Cytopoint (monoclonal antibody therapy)

This is an injectable medication that works in a similar method to Apoquel, through blocking specific components involved in the allergy and itch pathway (IL-31). A single injection generally takes effect within a few hours and lasts for 4-8 weeks.

This medication is formulated for dogs only.

### c. Atopica (Cyclosporin)

This medication is an oral medication that controls allergies through suppressing the immune system response to allergens. This medication can take 2-4 weeks to reach maximum effect therefore does not improve signs as quickly as Apoquel or Cytopoint.

This medication is approved for both cats and dogs.

### d. Hyposensitization Immunotherapy

Commonly referred to as "allergy shots" this medication is formulated based on results of allergy testing and is described under the section above on allergy testing.

### e. Anti-histamines

This group of medications include those such as Benadryl, Zyrtec, and Claritin. In general, anti-histamines do not work well in pets, especially when used alone. This is because pets metabolize these drugs a lot faster

than humans do so they do not stay in their system for long. Also, pets have a different allergy pathway than humans do. Anti-histamine release is a major component in a human's allergy pathway but a more minor component in a pet's allergic response.

#### f. Steroids

Steroids may be the best option in a case of severe and sudden allergic reaction as they are potent medications that work quickly. However, steroids can have significant side effects, especially if used long term. With the advent of the effective and safer allergy medications listed above, steroids have largely fallen out of favor as an option for management of allergies.

### 3) Food Allergy management

The only way to manage food allergy is by completely avoiding the food ingredients that your pet is allergic to. A feeding trial is the way to determine this. Your Veterinarian will work with you on selecting a feeding plan best for your pet based on individual food allergies.

### 4) Treatment of Secondary or underlying infections

As outlined above, infections of the skin and/or ears are very common as an outcome of allergies and breakdown of the skin barrier.

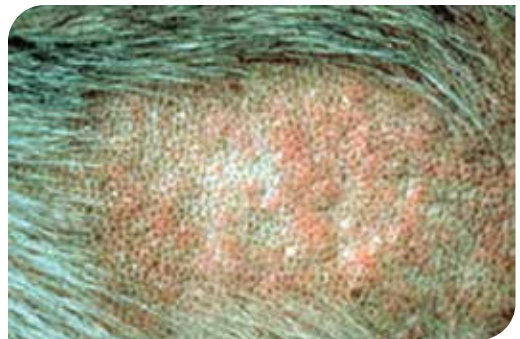
Infections on skin and within ears can occur as various types of bacteria and/or yeast. For these infections, an appropriate medication to target the specific organism(s) is needed to treat the problem. Skin and/or ear cytology (microscopic testing on samples taken from the skin and ears) is used to identify the type(s) of infection present so that the appropriate medication(s) can be started.

The most common organisms involved in skin and ear infections are staphylococcus bacteria, pseudomonas bacteria, and malassezia yeast. All of these organisms are treated with a different spectrum or type of medication therefore skin and ear cytology is important in determining which organism(s) is present and therefore what medication may be needed for treatment.

Occasionally, these infections are severe and bacteria present are more serious and resistant to treatment (such as MRSA). In these cases, a culture is needed to identify the specific species of the bacteria and determine what antibiotic is needed to treat it.

### 5) Restoration of the skin barrier

In pets with allergies, therapies that come in the form of shampoos, conditioners, lotions, and/or supplements may be needed to repair the skin barrier or to support the skin barrier over time. Ingredients that serve to protect and restore this barrier include omega fatty acids and Phytosphingosines.



**It is important to note that most of the therapies listed above are for Management NOT a Treatment.** Treatment means that a cure can be reached. In the overwhelming majority of allergy cases, a cure will never be reached as exposure will lead to relapse if not being managed with medication. For this reason, one or more of these therapies may be needed for life or during certain seasons in the case of seasonal allergies.

***“Symptoms of atopy can be controlled but a permanent cure is not usually possible.”***

**Although the overwhelming majority of skin problems in cats and dogs are caused by allergies, there are other diseases that can affect the skin as well.** These include skin mites, dermatophytes (a fungal infection commonly known as “ringworm”), endocrine diseases such as disease of the thyroid gland (hypothyroidism), disease of the adrenal glands (hyperadrenocorticism/Cushings disease), genetic skin diseases, and less commonly autoimmune diseases (Lupus, Pemphigus).

For this reason, additional testing may be needed if your pet is not responding to allergy management, has clinical signs consistent with another disease, or is of a certain age or breed. This testing can consist of diagnostics such as skin scraping and microscopic examination for mites, dermatophyte fungal culture for ringworm, and bloodwork, and/or skin biopsy for other diseases listed above.

**Due to the many factors influencing your pet, we realize that allergies can be a complicated and frustrating disease to manage. Your Veterinarian will walk you through the individual factors for your pet and formulate a diagnostic and management plan that is best for them.**

**Please contact your veterinarian should you have any additional questions or are seeking additional information regarding allergies. It has been a pleasure caring for your pet and we hope to continue in helping you to provide the care that they need to live a happy, healthy, and long life!**



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