

## **What's the Itch All About?**

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When an animal is allergic to something, its body is overreacting to certain molecules called allergens such as dust, dust mites, mold, grass, ragweed, trees, flea saliva, and food proteins.

When allergens are inhaled, ingested, or come in contact with the animal's body (absorbed) – the animal's immune system makes a protein called IgE.

This protein IgE is produced in large amounts and attaches to tissue mast cells. When animal comes back in contact with the allergen – the IgE attached to tissue mast cells causes the mast cells to release several irritating chemicals such as histamine, cytokines, leukotrienes, and others.

The tissue mast cells are primarily located in the skin of animals – thus the irritation occurs there and causes itching. In people, mast cells are primarily located in respiratory tract – eyes, nose, and lungs.

So when you are sneezing and your pet is itching – you both could be having allergies to the same things

Allergies are also believed to also involve a barrier defect in people and animals. When antigen comes in contact with skin surface, skin barrier defects allow the antigen to penetrate the epidermis and bind to immune cells. This causes a release of histamine, proteases, and cytokines which cause the itching.

### 4 different types of allergies

1. Allergic inhalant allergies. Other names: atopy, allergic dermatitis
  - Most common - 70-80% Itching animals
2. Food allergies
  - 5-20% of itching dogs
  - 40% of itching cats
3. Flea allergy dermatitis
4. Contact allergy dermatitis

Environmental factors are also interacting with Genetics. Several dog breeds are known for allergies such as boxer, cocker spaniels, Labrador retrievers, poodles, bulldogs, and others. In cats – no genetic factors have been found at this time.

Clinical symptoms of allergies is ITCHING!!!!!! (licking, chewing, scratching)

Scratching on the body, hair loss due to self-trauma is a common feature

Can be seasonal (spring, fall) or all the time

Many times starts off as seasonal and becomes all the time as animal develops more allergies

Chewing on feet, Rubbing face on carpet

Can occur with skin infection and ear infections

Red itchy eyes, sneezing

Cats will show different symptoms sometimes

Licking excessively, Eosinophilic plaques, Rodent ulcers on lips, Skin infections and ear infections

Age for allergies - Typically starts at 2-3 years of age in both cats and dogs

It takes time for body to build up immune response against allergens.

Many times the first year in a new environment – animals will not react, but the following year will show symptoms

Testing for allergies

NO DIAGNOSTIC TEST FOR ALLERGIES

History, clinical signs, response to treatment

Rule out other causes for symptoms – fleas, Fungal infections, yeast infections, Bacterial infections, Mites, Thyroid disease

Can you test for the allergens your animal may be allergic too?

Intradermal Skin Testing – Dermatologist

Can help identify allergens for avoidance

Information used to make up vaccine for immunotherapy

70% efficacy for improvement of clinical symptoms

Does not accurately test for food allergies

Bloodwork (serology) – Checks for allergy specific IgE in the bloodstream

Can be done at Vet office

65% efficacy for improvement of clinical symptoms

Does not accurately test for food allergies

## Treatment - No specific protocol

Treat all secondary yeast and bacterial infections

- Ear swab to look for infection – bacterial or yeast
- Clean out ears and apply medicine
- Routine ear cleanings to prevent future infections
- May swab skin to look for bacteria/yeast
- Treat skin infections with pills or topical medication

Short term corticosteroids to control itch cycle

- Stabilizes the mast cell – keep it from releasing chemicals
- Should be used short term
- Breaks the itch cycle
- Works great to control allergy symptoms
- Injectable and pill form
- Has long-term side effects
- May cause excess peeing and drinking
- Cortisone and antihistamine combo

Antihistamine tablets – stops histamine from being released from the mast cell

- Can be used long-term with minimal side effects
- Works well with mild itching
- Minimal side effects
- Inexpensive
- Can be used long-term
- Can be used with other allergy medicines

Topical medications – shampoos, creams – very safe

- Shampoos - Let sit for 10 minutes, Leave-in cream rinse
- Very safe, Help control Itching, Bacterial infections, Yeast infections, Red, inflamed skin, Dry or Oily skin (seborrhea), Replenishes oil in skin barrier
- Topical medications like Creams, Ointments, and sprays – very safe – helps with itching, bacterial infections, yeast infections, red and inflamed skin

Essential Fatty Acids (omega 3) capsules – helps barrier

- Helps balance skin barrier and manage inflammation in skin and other organs
- Supplementing will help 50-65% of dogs and cats

Cyclosporine – works well, \$

- Keeps Helper T-Lymphocytes from releasing chemicals which cause the Mast Cell to release histamine and other chemicals

Works well in 50-60% of dogs and cats, can have long-term side effects  
Use daily dosing for 4-6 weeks, then go to every other day or every 3rd day if working

Selective JAK (Janus Kinase) inhibitor – works well, availability?

Inhibits the function of the cytokines released from the Mast cell that cause itching  
Very specific, minimal side effects, So far – looks good to use long-term  
Meant to replace corticosteroids and can be use with other allergy medicine  
Dogs only, No cat product

Immunotherapy

Identify allergens animal is allergic. Skin and Blood test, 65-70% improvement of symptoms  
Usually recommended if medications aren't enough to control symptoms  
Retrains the immune system by injecting small amounts of allergens  
Owners shown how to give injections  
For dogs and cats, will take up to one year to see improvements  
May need to give injections for years  
Does not work for food allergies  
Will still use other allergy meds at least for 1-2 years  
Daily oral (my mouth) therapy also available

Essential oils and other complementary treatments

Essential Oils – Lavender, Lemon, Peppermint  
Dermoscent

Avoidance – Dust/Dust Mites

Plastic or Allergy covers for bedding/pillows  
Reduce humidity  
Dehumidifier  
Use air conditioning  
Wash bedding weekly in hot water (130F)  
Replace or remove drapes, upholstery, and carpet  
Have animals out of the room while vacuuming and several hours after  
Minimize stuffed toys or pillows  
Freeze toys and small pillows for 24 hours (kills mites)  
During winter months place dog mattress outside for 24 hours (kills mites)  
Use hypoallergenic filters in house and change often

Avoidance – Pollens

Keep track of pollen count often  
Local daily reports online

Keep pets indoors when pollen counts are high  
Keep windows closed during high pollen counts – especially through the day  
Wash feet when animal comes inside – may need to bath if outside a long time  
Keep pet inside when mowing lawn

#### Avoidance – Molds

Keep pets out of basement  
Avoid large number of houseplants (grows in soil)  
Use Dehumidifiers  
Clean and disinfect dehumidifiers/humidifiers more often  
Clean kitchens, bathrooms, and basements regularly and keep them well aired

#### Avoidance – Fleas

Keep all animals on flea medicine at least spring through fall to prevent infestation  
Watch for other animals coming into your environment that may bring fleas

#### Avoidance – Foods

Minimize different foods and treats your pet eats  
Pick one type of food to feed and keep the same as long as pet does well  
Pick one or two types of treats  
Limit table feeding – especially beef and dairy  
The more types of food your pet sees – the more they can develop allergies to those foods

#### Food Allergy verses Food Intolerance

Allergy - Itching, ear infections, skin infections, swollen face  
Intolerance - vomiting and diarrhea

Can occur concurrently with Inhalant Allergies (40%)

Not typically seasonal – so all year around, can be at any age, but seen in young animals commonly

Food allergens in order of most common:

Beef, Cow's milk (Dairy), Lamb, Chicken, Grains (corn, soy, wheat), others

There is no blood test or skin test for food allergies

Blood levels of IgE don't match up with clinical signs

Diagnosis is made with a food elimination trial, followed by a food challenge

Feed one hypoallergenic diet ONLY for 10-12 weeks

If animal improves – go back to original diet and wait for itching to come back – then reintroduce hypoallergenic diet to see itching goes away again

Types of food allergy trials:

Novel Protein source

Find protein animal has never been exposed too

Example: Duck, Kangaroo, Venison, Potato, etc

Hydrolyzed Protein

Protein packaged so that the animal immune system doesn't recognize the protein source

Homemade Diet – should be using a veterinary nutritionist

[www.petDIETS.com](http://www.petDIETS.com)

[www.balanceit.com](http://www.balanceit.com)

Difficult to accurately identify sometimes

Hard to keep dog from eating anything other than one food for 10-12 weeks

Over-the-counter foods are not good Food Trial Diets

In a recent study 40% (of 52 foods) tested contained meat from a species not identified on the label

Pet food companies have 6 months to change a label after they have added something new to food and can change it back without changing label

Handout compiled by Dr. Patrick, New Haven Pet Hospital

References:

Multiple VIN handouts

Dermatology Specialty Center

Vet Associate

Multiple images from internet: Images of cat, specific dog breeds, allergy reaction, pollen, dust mite, skin allergy testing, mold, dust bunny, dog eating chocolate, dog eating grass, chicken, hamburger, itching dog, et al

Food study from JAVMA news May 15, 2015

Fun facts from animal league.org, petfinder.com, Wikipedia

Images of barrier defect taken from Bayer handout