



## Atopy and Environmental Allergies

Atopy is an allergic condition caused by a hypersensitivity reaction to environmental allergens. It is the result of an overactive immune system. Common environmental allergies are to grasses, pollens or dust but can be to anything in the environment (including carpets or fabrics). It is often difficult to know exactly what the allergen is that is causing the reaction. In dogs and cats, atopy is most commonly seen as skin disease and secondary skin infections resulting in ITCH. This means that significant itch is experienced even with a small amount of allergen present.

In a 2018 study in the State of Pet Health Report done by Banfield Pet Hospitals across North America, it was found that environmental allergies are on the rise, much faster than food allergies or flea allergies in our cats and dogs over the past 10 years. Environmental allergies have increased approximately 30% in dogs and 11% in cats.

### Commonly affected breeds

- Golden Retrievers
- Labrador Retrievers
- Boxers
- German Shepherds
- Cocker Spaniels
- French and English Bulldogs
- West Highland Terriers



### How is atopy diagnosed?

Atopy is a diagnosis of rule out. Meaning that we have ruled out all other causes of allergy and itch and are left with environmental allergens. Many pets with environmental allergies also have other types of allergies as well, such as flea allergies and or food allergies. They will often work together to increase the level of itch experienced by the animal.



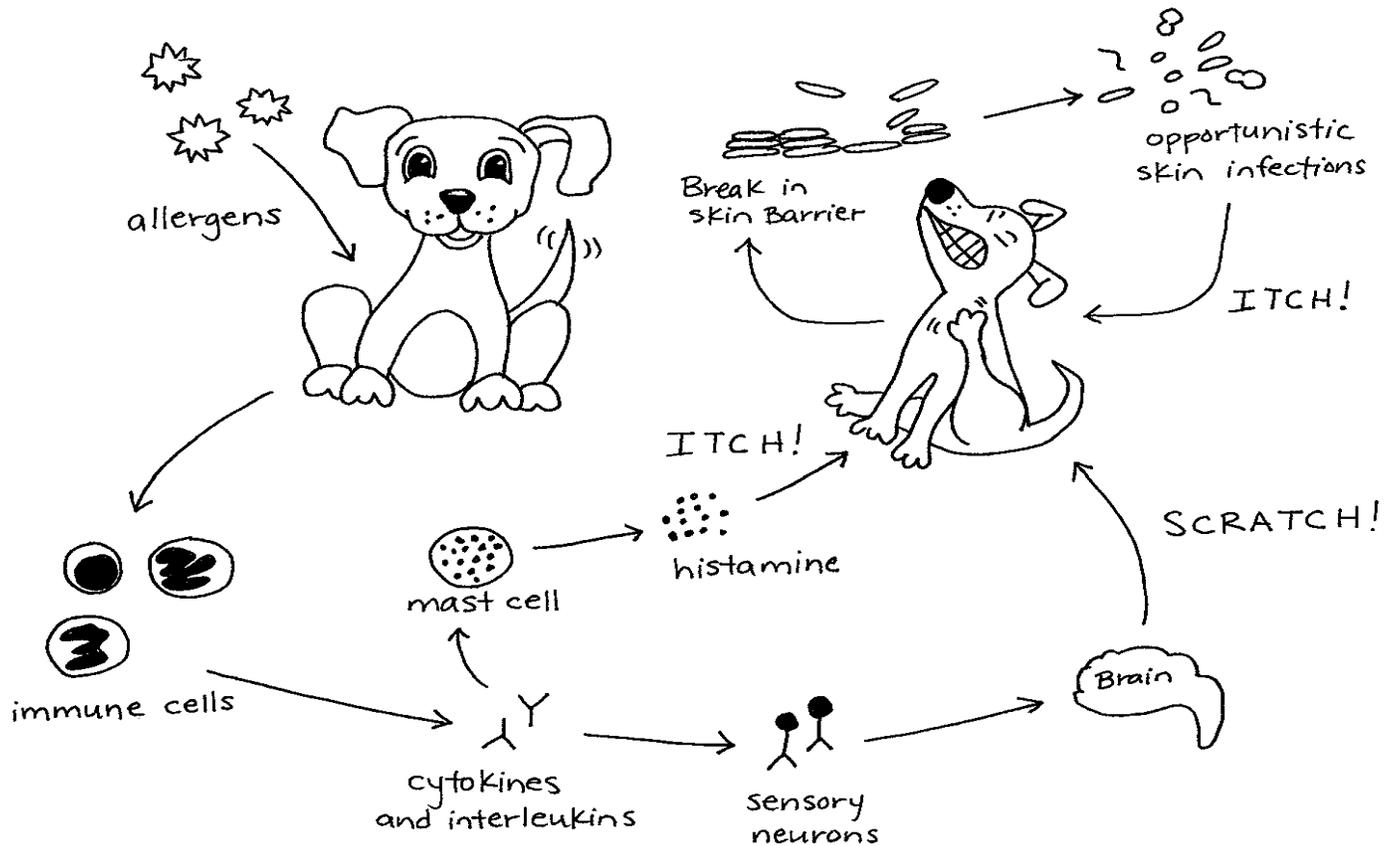
**Figure:** A "hot spot" is an area of skin that has become itchy and the animal has scratched raw. These often become infected.

### Common itchy locations

- Ears, unilateral or bilateral
- Paws
- Belly and inguinal region
- Armpits
- EVERYWHERE



## The itch pathway



**Figure:** An allergen will elicit an immune response from the immune cells that will release cytokines and interleukins that start the itch pathway in motion. The messenger cytokines will initiate release of histamine from mast cells and will cause sensory neurons in the skin to register itch. These will cause the animal to begin scratching the skin. Once the skin barrier is broken and there are open wounds, opportunistic bacteria can over-populate and cause skin infections-which are itchy! And so the cycle continues...

## How is atopy treated?

Atopy is managed by trying to control the itch or by decreasing sensitivity to the allergen.

By disrupting the itch pathway, the cycle of itch is broken allowing for a reprieve of itch. Different medications will target various locations of the itch pathway, some target areas may be more effective than others for different animals.

Anti-histamines will prevent the release of histamine from mast cells but will still allow other areas of the pathway to continue uninterrupted.



Immune-modulators or immunosuppressors will target the immune cells to prevent their involvement in the itch pathway. Some immune modulators are very specific while others are very general, decreasing the activity of all immune cells in the body.



Steroids are very effective at decreasing itch because they are broad immune modulators and suppressors. Their broad activity will decrease the animal's immune system in general, which may increase their risk of infections or other skin disease. Long term steroid use will also affect the liver and adrenal glands health and may produce side effects such as increased thirst, hunger and urinations. This is why steroids are so effective, but their ideal use is short term. Steroids used topically will result in less systemic absorption and therefore fewer side effects.

Vanectyl P is a mixed medication of a steroid and an anti-histamine.

Atopica (cyclosporin) is another immune modulator or suppressor but more targeted and therefore safer for long term use. It will target certain immune cells only that are in the itch pathway.

Apoquel (oclacitinib) is the newest medication on the market with approval for use in dogs. It is a very targeted medication that inhibits the janus kinase receptor and subsequently interleukins (IL-31) to prevent itch. It is therefore safer for long term or seasonal use to prevent itch.

Cytopoint is a long-lasting monoclonal antibody therapy that is similar to Apoquel but given as an injection that is repeated every 4 to 8 weeks as needed by the animal.



## Ancillary therapies

- Flea preventatives: Because atopic pets live with a chronic level of itch, we try to minimize their chances of worsening itch by preventing fleas and flea bites.
- Antibiotics or antifungals: Skin or ear infections are common with atopy and can be diagnosed by doing a skin cytology and/or culture. This involves looking at a skin sample or skin scraping under the microscope or sending the sample to the lab for culture and antibiotic sensitivity testing. Antibiotics or antifungals are prescribed based on cytological or culture findings.
- Other parasites: mites can live under the skin and cause itch. Mites can be diagnosed by assessing a skin scraping under the microscope.
- Shampoos: Bathing atopic dogs can be very successful. Chlorhexidine based soaps or shampoos are effective to reduce bacterial load on the skin. Other shampoos like, Douxo Calm will help to maintain the skin barrier with the help of phytosphingosine, a lipid that has the ability to replenish the skin's natural barrier. Like all medicated shampoos, it is important to allow them 10 minutes of contact time with the skin before rinsing with luke warm water.





- Hypoallergenic diets: We know that many pets with environmental allergies also have other forms of allergies. We can try to minimize their level of itch with a hypoallergenic diet.
- Skin supportive diets: Sometimes skin supportive diets can be more effective if no concurrent food allergies are present by helping the skin barrier to remain healthy and intact. These will typically have higher levels of omega fatty acids, antioxidants and vitamins among other bioactive ingredients
- Topical steroids for ears or skin in the form of drops or creams.
- Referral to a dermatologist for allergy testing and hyposensitization injections can be done. The goal of this therapy is to reduce the animals response to the allergen overtime.



## Prognosis

Atopy can be one of the most frustrating conditions to treat. Atopy usually cannot be cured, only managed and therefore we must constantly be vigilant of flare ups. Atopic animals live with a certain level of itch their whole lives. We try to manage or decrease the level of itch to be mild and tolerable for them. We understand that this condition can be difficult to manage and we are here to help every step of the way. Thank you for entrusting Nanaimo Veterinary Hospital with the care of your pet. Please do not hesitate to contact us with any questions or concerns you have along the way at 250-758-3985 or by email at [nveth@shaw.ca](mailto:nveth@shaw.ca).