

# Allergic Dermatitis – Feline

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## Definition

*Allergic dermatitis* refers to any hypersensitivity disorder that causes an inflammatory condition of the skin. The most common of these disorders affecting cats are **flea allergy**, **food allergy** (also known as adverse food reactions), and **atopic dermatitis**.

## Key Diagnostic Tools and Measures

The history, including seasonality and diet or diet changes, is the first step in diagnosis of the cause of allergic dermatitis. During physical examination, the location of lesions can provide important diagnostic information: if the cause is flea allergy, lesions are likely to be found on the caudal half of body and dorsal neck, and miliary dermatitis (encrusted papules) is often present. With atopic dermatitis and food allergy, lesions include facial, head, and neck pruritus; miliary dermatitis, eosinophilic granuloma complex; and self-induced alopecia. Skin cytology is needed to check for secondary bacterial and *Malassezia* infections.

## Pathophysiology

Atopic dermatitis is mediated by allergen-specific immunoglobulin E (IgE). Allergens, via the percutaneous route, bind to IgE antibodies bound to mast cells, which then release inflammatory substances.<sup>1</sup>

The etiology of food allergy is not well understood, but both cell-mediated and antibody-mediated processes are probably involved.

In flea allergy dermatitis, the allergens are proteins in the saliva of the flea.

## Signalment

Age, breed or gender predilections have not been consistently proven for cats with atopic dermatitis, food allergy or flea allergy.

## Key Nutrient Modifications

In cats with atopic dermatitis, essential fatty acids (EFAs) may be used as antipruritics.

## Recommended Ranges of Key Nutrients

Nutrient	% DM	mg/100 kcal	% DM	mg/100 kcal
	Recommended dietary level	Minimum dietary requirement*		
Total n3 (from fish oil)	0.4–0.8	81–156	n/a	n/a
EPA	0.24–50	50–94	n/a	n/a

Modified intake of these nutrients may help address metabolic alterations induced by disease states. The recommended dietary composition is shown as percent of dietary dry matter (DM) and as g or mg per 100 kcal metabolizable energy. All other essential nutrients should meet normal requirements adjusted for life stage, lifestyle, and energy intake.

\*Nutrient requirement for adult animals as determined by the Association of American Feed Control Officials

If supplements are used, an anecdotal recommendation for dogs is to use at least 36–44 mg/kg body weight/day of eicosapentaenoic acid (EPA) from fish oil, or approximately 1 g fish oil/5 kg body weight. There is no evidence to determine if this is or is not appropriate for cats.

## Therapeutic Feeding Principles

**Food Allergy:** Diagnosis and therapy is feeding an elimination (“hypoallergenic”) diet. The elimination diet is based on previous exposure to various food stuffs, and may be either home-made or commercial elimination (limited antigen) diets.

Other than fresh water, nothing else should be fed during the elimination diet trial: no vitamins, chewing toys, flavored medications, or toothpaste. Because a home-made elimination diet is not a balanced one, owners should be warned that the cat may lose weight, develop a “dull” hair coat or scaling, or be hungrier than usual. The new diet should be introduced gradually over a few days by initially mixing it with the old diet. Owners should be warned that failure of the cat to eat the new diet for more than 2 days could result in disease (hepatic lipidosis) and should quickly prompt the search for a more palatable diet.

The length of the elimination diet is usually from 8 to 12 weeks. Persistence of some pruritus at 12 weeks may indicate the presence of other concurrent hypersensitivities. In cases in which antibiotics are given to treat secondary infections, or oral corticosteroids for severe pruritus, the diet should continue for 2 weeks past when these treatments are discontinued in order to properly judge its efficacy.

Upon resolution of clinical signs, the cat is challenged with its regular diet to confirm the diagnosis. Recurrence of clinical signs is usually noted within 2 weeks. The cat is then fed its elimination diet again, and the owner may challenge with suspected allergens, each being given 1 to 2 weeks at a time. The most common proven allergens in the cat are milk and dairy products, fish, and beef. Once the offending allergens are identified, commercial cat foods without them may be fed. When the owners refuse to do provocative testing, a limited-antigen cat food may be used.

■ **Treats** – No treats except for those containing the same ingredients as the elimination diet can be used during the diet trial. After a diagnosis of food allergy is made and an appropriate maintenance diet found, treats may be introduced on a weekly basis to evaluate any recurrence of clinical signs.

■ **Tips for Increasing Palatability** – Occasionally, heating the diet before feeding will improve palatability. If the cat refuses to eat an elimination diet after 2 days, it is necessary to try a diet with another protein.

■ **Diet Recommendations** – Elimination diets should avoid foodstuffs fed previously. For home-made diets, “novel” proteins such as pork, rabbit, and duck and carbohydrates such as sweet potatoes and tapioca are options. Commercial diets should specifically be marketed as limited-allergen. These may consist of “novel” proteins or hydrolyzed proteins that are too small a molecular weight to trigger the cat’s immune system.

## Client Education Points

- **Atopic Dermatitis:** Clients should recognize that this disease needs to be controlled and managed throughout the cat’s life; if EFAs are helpful in controlling pruritus, they will need to be given life-long.
- **Food Allergy:** Clients need to be very strict throughout the elimination diet trial. They should keep a daily record, noting pruritus, anything eaten that is not in the diet, and, ideally, any change in feces (e.g., consistency, odor).
- **Flea Allergy:** The role of the flea, and the various insecticides available to protect the cat from the flea’s bite, should be explained. While the efficacy of EFAs as an aid in managing the pruritus of flea allergy has not been extensively investigated, the use of EFAs as an adjunct to parasitidal treatment may be attempted.

## Common Comorbidities

All three allergic dermatoses may have secondary bacterial (usually *Staphylococcus* spp) and/or *Malassezia* spp (yeast) infections.<sup>2</sup> These will need to be treated as well as the allergic dermatitis, as the infections in and of themselves may cause pruritus.<sup>3</sup> Food allergy also may cause gastrointestinal signs, especially colitis. Rarely, angioedema or asthma-like signs have been noted to be caused by food allergy.<sup>4</sup>

## Interacting Medical Management Strategies

As noted above, antibiotics and anti-yeast medications (avoiding ketoconazole due to its reported hepatotoxic effects in cats) will need to be given to treat secondary infections. Such medications are usually administered for 4 to 8 weeks. Corticosteroids may be needed to control pruritus, although their use should be limited to oral products with short-acting effect, such as prednisolone (more effective in many cats than prednisone). The lowest possible every-other-day dosage should be the goal

when corticosteroids are deemed necessary. Cyclosporine is often helpful in controlling clinical signs of atopic dermatitis; its efficacy in other allergic dermatoses has not been evaluated. Also relevant to atopic dermatitis is hyposensitization (immunotherapy, or “allergy shots”) based on intradermal or serologic testing. Hyposensitization is not recommended for the treatment of food allergy; its role in the management of flea allergy needs further investigation.

## Monitoring

Cats with allergic dermatitis should be rechecked at least twice yearly following elimination of clinical signs; more frequent rechecks are indicated dependent upon the potential adverse effects of treatment (such as those seen with cyclosporine or corticosteroids). Cats should also be evaluated if pruritus recurs, as this may mean either a relapse in the treatment of the allergic dermatitis (e.g., eating a “forbidden” allergen or a lapse in flea control), the recurrence of a secondary infection, or the emergence of another hypersensitivity (e.g., the food-allergic cat that develops atopic dermatitis).

## Algorithm – Nutritional Management of Feline Allergic Dermatitis

