



# Flea-Bite Hypersensitivity and Flea Control

## Basics

### OVERVIEW

- “Hypersensitivity” is an increased sensitivity or reaction in the skin due to the presence of a foreign substance; in flea-bite hypersensitivity, the foreign substance is found in flea saliva; the reaction is immune based and would be considered to be an “allergic” reaction
- “Dermatitis” is the medical term for inflammation of the skin
- “Antigens” are substances that induce sensitivity or immune response
- “Flea-bite hypersensitivity”—hypersensitivity or allergic reaction to antigens in flea saliva, with or without evidence of fleas and flea dirt
- “Flea infestation”—fleas and flea dirt are present on the pet, with or without signs of flea-allergy dermatitis
- “Flea-bite dermatitis”—inflammation of the skin due to the flea bite itself; it is not an allergic or hypersensitivity reaction, but rather an irritant response to flea bites

### GENETICS

- Flea-bite hypersensitivity—unknown inheritance pattern; more common in breeds with atopy (disease in which the pet is sensitized [or “allergic”] to substances found in the environment [such as pollen] that normally would not cause any health problems)

### SIGNALMENT/DESCRIPTION OF PET

#### Species

- Dogs
- Cats

#### Mean Age and Range

- Flea-bite hypersensitivity—rare in pets less than 6 months of age; average age range, 3–6 years, but may be seen at any age

### SIGNS/OBSERVED CHANGES IN THE PET

- Determined by the severity of the reaction and the degree of exposure to fleas (that is, seasonal or year-round)
- Itchiness (known as “pruritus”)
- Compulsive biting
- Chewing (“corn cob nibbling”)
- Licking, primarily in the back half of the body, but may include other areas
- Signs of fleas and flea dirt; finding fleas and flea dirt is beneficial, although not essential, for the diagnosis of flea-bite hypersensitivity

- Sensitive pets require a low exposure to fleas to have an immune response and they tend to over groom, removing evidence of flea infestation, and making identification of parasites difficult
- Hair loss (known as “alopecia”)
- Small, raised skin lesions (known as “papules”)
- Darkened skin (known as “hyperpigmentation”) in dogs
- Thickening and hardening of the skin, usually associated with hyperpigmentation (known as “lichenification”) in dogs
- “Hot spots” in dogs
- Miliary dermatitis (skin inflammation characterized by numerous, small, crusty bumps) in cats

## CAUSES

- Fleas
- Immune response to flea saliva (flea-bite hypersensitivity or flea-allergy dermatitis)

## RISK FACTORS

- Flea-bite hypersensitivity—intermittent exposure to fleas increases likelihood of development; commonly seen in conjunction with atopy (disease in which the pet is sensitized [or “allergic”] to substances found in the environment [such as pollen] that normally would not cause any health problems)

## Treatment

### HEALTH CARE

- Outpatient treatment

## Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Steroids—to decrease inflammation in the skin for symptomatic relief, while instituting flea control
- Antihistamines—symptomatic relief
- Flea control on the pet; examples include dinotefuran/pyriproxyfen (monthly spot treatment; rapid acting; two products—one for cats and one for dogs; dog product contains high dose of the insecticide, permethrin, and should NOT be used on cats); fipronil (monthly spot treatment for dogs and cats and spray treatment for dogs); imidacloprid (monthly spot treatment for cats and dogs); metaflumizone (monthly spot treatment for dogs or cats; product for dogs contains another active ingredient [amitraz] and should not be used on cats)
- Flea control using medications given by mouth (known as “oral medications”)—nitenpyram (rapid action, but short-acting; kills over 95% of adult fleas on dogs and cats within 4–6 hours of administration, lasts for 48–72 hours); spinosad (monthly oral treatment for dogs only)
- Other flea control for pets (such as flea sprays and other topical treatments)—usually contain pyrethrins and pyrethroids (synthetic pyrethrins) with an insect-growth regulator or synergist; generally effective for less than 48–72 hours
- Environmental/indoor treatment—professional exterminator or home-use fogs and premises sprays; products usually contain organophosphates, pyrethrins, and/or insect-growth regulators; apply according to manufacturer's directions; treat all areas of the house
- Environmental/indoor treatment using inert substances—boric acid, diatomaceous earth, and silica aerogel; treat every 6–12 months; follow manufacturer's recommendations
- Environmental/outdoor treatment—concentrate outdoor treatment in shaded areas; sprays usually contain pyrethroids or organophosphates and an insect-growth regulator; a product containing nematodes (*Steinernma carpocapsae*) is chemical-free
- Other products for use include flea powders, dips, sprays, and foams
- NOTE: Always read all label instructions and follow the manufacturer's directions when using any flea-control product; ensure that the product is labeled for use on the species (dog or cat) or location (indoors or outdoors) for which you intend to apply it—for example, some products that are safe for dogs are very toxic to cats and should not be used on cats

# Follow-Up Care

## PATIENT MONITORING

- Itchiness (pruritus)—a decrease in itchiness indicates the flea infestation and/or flea-bite hypersensitivity is being controlled
- Fleas and flea dirt—absence is not always a reliable indicator of successful treatment in very sensitive pets

## PREVENTIONS AND AVOIDANCE

- Year-round warm climates—year-round flea control is required
- Seasonally warm climates—begin flea control in May or June, as directed by your pet's veterinarian

## POSSIBLE COMPLICATIONS

- Secondary bacterial infections
- Sudden (acute) moist dermatitis, also known as “hot spots”
- Acral lick dermatitis (inflammation of the skin characterized by a firm, ulcerated lesion on a leg, caused by constant licking)

## EXPECTED COURSE AND PROGNOSIS

- Prognosis is good, if strict flea control is instituted

## Key Points

- Flea control is important for dogs and cats
- No cure exists for flea-bite hypersensitivity
- Flea-allergic pets often become more sensitive to flea bites as they age
- Controlling exposure to fleas is currently the only means of controlling signs; “allergy shots” (known as “hyposensitization”) for flea-bite hypersensitivity are not effective

# Notes

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