

## Establishment of diagnostic criteria for feline nonflea-induced hypersensitivity dermatitis

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### Conflict of Interest

Jean Steffant and Wolfgang Seewald are full-time employees of Novartis Animal Health.

### Abstract

**Hypersensitivity dermatitides (HD) are commonly seen in cats, and they are usually caused by environmental, food and/or flea allergens. Affected cats normally present with one of the following clinical reaction patterns: head and neck excoriations, usually symmetrical self-induced alopecia, eosinophilic skin lesions or miliary dermatitis. Importantly, none of these clinical presentations is considered to be pathognomonic for HD skin diseases, and the diagnosis of HD is usually based on the exclusion of other pruritic diseases and on a positive response to therapy. The objectives of this study were to propose sets**

**of criteria for the diagnosis of nonflea-induced HD (NFHD). We recruited 501 cats with pruritus and skin lesions and compared clinical parameters between cats with NFHD (encompassing those with nonflea, nonfood HD and those with food HD), flea HD and other pruritic conditions. Using simulated annealing techniques, we established two sets of proposed criteria for the following two different clinical situations: (i) the diagnosis of NFHD in a population of pruritic cats; and (ii) the diagnosis of NFHD after exclusion of cats with flea HD. These criteria sets were associated with good sensitivity and specificity and may be useful for homogeneity of enrolment in clinical trials and to evaluate the probability of diagnosis of NFHD in clinical practice. Finally, these criteria were not useful to differentiate cats with NFHD from those with food HD.**

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### Introduction

Cats with hypersensitivity dermatitides (HD) are usually presented to veterinarians with one of the following clinical reaction patterns: head and neck excoriations, symmetrical self-induced alopecia, miliary and/or eosinophilic dermatitis.<sup>1–5</sup> Flares of these HD are normally triggered by one or more of several groups of allergens that include airborne environmental, dietary ingested and flea salivary injected allergens. Unfortunately, the clinical presentations mentioned above are neither pathognomonic for HD, nor are they specific for any particular group of allergens. The final diagnosis of HD is based principally on the exclusion of other pruritic diseases. Additionally, responses to dietary restriction–provocation challenges, to flea control or to immune-modulating therapy (e.g. allergen-specific immunotherapy, glucocorticoids or ciclosporin) are necessary to establish the aetiological diagnosis of food-associated HD, flea-bite HD and nonflea, nonfood HD, respectively.<sup>1,2,5,6</sup>

The large phenotypic variability of feline nonflea HD (NFHD) has prevented attempts to establish diagnostic criteria for this syndrome. Employing an epidemiological approach and adapted mathematical methods, we recently validated two sets of criteria for the diagnosis of another heterogeneous HD, canine atopic dermatitis.<sup>7</sup> These sets of criteria are associated with sensitivity and specificity up to 80% and are expected to enhance the homogeneity of recruitment in clinical studies.