

# The different manifestations of atopy

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## What is atopic dermatitis?

Canine atopic dermatitis has been defined as “a genetically predisposed inflammatory and pruritic skin disease with characteristic clinical features associated with IgE antibodies, most commonly directed against environmental allergens.” (Halliwell 2006). This definition implies that the disease is homogeneous and that there are pathognomonic clinical signs which might allow a practitioner to diagnose atopic dermatitis based on presentation and clinical examination.

Clinical criteria for canine atopic dermatitis were proposed by Willemse in 1986 and amended by Prelaud in 1998. Prelaud’s criteria included steroid-responsive pruritus, pinnal erythema, bilateral cranial erythematous pododermatitis, cheilitis and appearance of first signs between the ages of six months and three years.

In 1999 the American College of Veterinary Dermatology (ACVD) Task Force on Canine Atopic Dermatitis undertook a review of the available literature on canine atopic dermatitis (AD). As a result, a series of manuscripts, including one on the clinical phenotype of canine AD were published in 2001. This manuscript stated, “the face, concave pinnae, ventrum, axillae, inguinum, perineal area and distal extremities are most commonly affected in canine atopic dermatitis” (Griffin 2001).

A handful of studies focusing on clinical manifestations of canine AD have been published since 2001 (Bruet 2012; Favrot 2010; Jaeger 2010; Picco 2008; Tarpataki 2006; Wilhem 2011; Zur 2002). These studies included a total of 2880 dogs from North and South America, Europe, Japan and Australia and enhanced our current knowledge about the clinical phenotype of canine AD (Bizikova 2015).

A set of diagnostic criteria was proposed in 2010 (Favrot). These included: age of onset at under three years old, dogs living mostly indoors, glucocorticoid-responsive pruritus, chronic or recurrent yeast infections, affected front feet, affected ear pinnae, non-affected ear margins, non-affected dorsolumbar area.

Key dermatologic features for canine pruritic skin diseases include alopecia, pruritus, primary skin lesions including erythema, papules and pustules, and secondary skin lesions including epidermal collarettes, crusting, salivary staining, excoriations, alopecia, lichenification and hyperpigmentation. However, the clinical presentation can be diverse due to the influence of genetic factors such as breed associated phenotypes, extent of the lesions, stage of the disease and the presence of secondary microbial infections or other flare factors (Hensel 2015). One study and one case report have highlighted that some dogs with clinical AD do not fit the published criteria (Bensignor 2012; Bensignor 2016).

## Pruritus

The initial clinical feature of canine atopic dermatitis is pruritus, which can include scratching, rubbing, chewing, excessive grooming or licking, scooting and/or head shaking (Hensel 2015). Depending on the allergens involved, the pruritus may be seasonal (e.g. pollen) or non-seasonal (e.g. dust mites or food) (Zur 2002).

## Less common clinical features

Less common clinical features include urticaria (2–3%); hot spots (1–11%); hyperhidrosis (4–13%); interdigital fistulae (13 – 22%) and seborrhoea oleosa (8 – 14%). (Favrot 2010; Picco 2008; Jaeger 2010; Wilhem 2011).

Blepharitis is defined as inflammation of the eyelid and lid margin. Typical signs of blepharitis are erythema, swelling and periocular alopecia, often accompanied by blepharospasm. Depending on the underlying cause, blepharitis may also be pruritic. The most common underlying cause of blepharitis is allergic dermatitis (Weingart 2019).

#### Bacterial colonis

ation of the conjunctival sac in atopic dogs is more frequent and greater in extent than in healthy dogs (Furiani 2011).

### Stage of the disease

At the beginning, pruritus may be alesional or associated with primary skin lesions such as erythema and occasionally papules (Griffin 2001; Bensignor 2013).

Some owners may be confused by the presence of alesional pruritus, and query whether their pet is itching for attention or other behavioural problems, or whether they are imagining things.

It may be seen in the early stages of allergy or when seasonal disease first begins. A finding of pruritus in areas with no lesions can occur in canine atopic dermatitis cases at any point in the disease process, especially in cases that have recurrences or come out of remission (Hensel 2015).

In more chronic stages secondary skin lesions will occur due to self-trauma, chronic inflammation and secondary infections. Typical secondary skin lesions are excoriations, alopecia, lichenification, hyperpigmentation, crusting and seborrhoea (Hensel 2015).

### Age of onset

Review of the literature showed the majority of dogs developed signs of atopic dermatitis before the age of three years. The mean age of onset was between 1.7 years to 2.7 years (Bizikova 2015). French Bulldogs and SharPei dogs developed AD earlier in their life than other breeds (Wilhem 2011).

Another study using the same population of dogs demonstrated that dogs with food-induced AD were more likely to be younger (<1 year) or older (>6 years) in comparison to dogs with environmental associated AD (Favrot 2010).

### Breed associated prevalence and phenotypes

West Highland White Terriers (WHWT), Labrador and Golden Retrievers, Boxers, French Bulldogs, German Shepherds and Cocker Spaniels represented the most commonly affected breeds (Bizikova 2015).

The face, concave pinnae, ventrum, axillae, inguinum, perineal area and distal extremities are most commonly affected in canine atopic dermatitis (Griffin 2001) but breed associated variations of body sites affected by canine atopic dermatitis have been identified (Wilhem 2011).

Dalmatians have lips involved; French Bulldogs axillae, eyelids and flexor surfaces; German Shepherds more generalized, also more lesions affecting elbows, hindlimbs and thorax; SharPeis thorax, hindlimbs, flexor surfaces and dorsolumbar skin; WHWTs more frequent pruritus and generalized lesions and more frequent involvement of the dorsolumbar area, feet, flexor surfaces, lips, face and genitals. (Wilhem 2011).

Urticaria and otitis more often seen in Boxers; interdigital fistulae more common in Labradors, pyotraumatic dermatitis detected more often in German Shepherds, Golden and Labrador Retrievers, and seborrhoea oleosa with hyperhidrosis were more frequent in WHWT and German Shepherds (Wilhem 2011).

### Atopic like dermatitis

Canine atopic-like disease is clinically identical to canine atopic dermatitis, but IgE response to environmental or

other allergens cannot be documented (Halliwell 2006).

## Cats

Cats with hypersensitivity dermatitides present with one or more of the following patterns: miliary dermatitis, eosinophilic dermatitis, indolent ulcers, self-induced symmetrical alopecia and head and/or neck excoriations (Hobi 2011). Some other presentations have been reported including pododermatitis, facial erythema, seborrheic disorders or ceruminous otitis (Scott 2001; Foster 2004; Prelaud 1999; Prost 1993).

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