

## Canine Solar Dermatitis

Canine solar dermatitis or chronic sun damage to the skin is a common dermatologic disorder in hot sunny climates. However solar dermatitis can sometimes mimic other skin diseases such as allergies or pyoderma, and be unrecognized and so go untreated until irreversible damage or sun induced skin cancers have developed. This article will review the clinical signs, diagnostics and treatment options for solar dermatitis.

**Clinical signs:** Solar dermatitis most commonly affects short coated breeds such as pit bulls, boxers, Dalmations, bull terriers, and whippets, but any dog with white or lightly pigmented hair and skin is at risk. Sun damage most commonly occurs on thinly haired areas such as the inguinal and axillary areas and the dorsal nose, but can occur on the dorsal and lateral trunk and lateral legs as well. In dogs that prefer to lay on one side of their body, lesions may be worse on the side turned upward. The duration and intensity of sun exposure influences the degree of skin damage. The initial signs of actinic damage are erythematous scaly lesions which may be tender. With repeated sun exposure, actinic folliculitis, follicular cyst formation and dermal fibrosis occur. In dogs with black spots, there is often sharp demarcation between areas of normal skin with protective pigment and damaged unpigmented skin. With chronic sun exposure, damaged areas become thickened and scarred, with comedones, erosions, ulcers, crusts, and draining tracts.

Secondary bacterial pyoderma is common. Sun induced skin tumors may occur such as squamous cell carcinoma, hemangioma and cutaneous hemangiosarcoma. Although the dogs may lick affected areas, pruritus is usually otherwise minimal, unlike dogs with allergic dermatitis, but some dogs can also be affected by both allergies and solar dermatitis.

**Diagnosis:** Signalment, clinical signs, ruling out other causes for scaly red dermatitis/folliculitis such as bacterial, demodex or dermatophyte infections, and ultimately skin biopsy are used to diagnose solar dermatitis. Systemic antibiotics should be prescribed for 3-4 weeks prior to skin biopsy to resolve secondary bacterial infection.

Biopsies can be obtained with use of local lidocaine and a 6mm punch, and multiple samples of different lesions should be obtained. In early cases, skin biopsy shows variable degrees of perivascular dermatitis, folliculitis and dermal fibrosis/increased collagen accumulation or collagen damage. Solar elastosis (linear bands of degenerated basophilic elastin accumulation arranged parallel to the skin surface) may be seen. In chronic cases, biopsy may show follicular cysts, pyogranulomatous inflammation and precancerous actinic

keratosis or skin neoplasia 1,2 . Since some of the histopathologic changes can be seen with other conditions such as bacterial folliculitis, the keys to a successful biopsy diagnosis are to include a complete history on the biopsy submission form, including signalment, distribution of lesions, clinical description of lesions, response or lack of response to prior therapies, and current medications which could affect biopsy results including steroids. Additionally, use of a veterinary dermatopathologist is recommended (see appendix).

**Treatment:** The main treatment recommendation for solar dermatitis is restricting sun exposure, by keeping the dog indoors during the day. If some sun exposure is unavoidable, then use of topical sunscreens (spf > 25, waterproof and baby safe) or T shirts may be helpful to decrease sun exposure; however it is often impossible to cover all at risk areas of the skin. A dog sunsuit is available at [www. designerdogwear.com](http://www.designerdogwear.com). To decrease sun damage, it has been reported that B-carotene 30mg PO BID x 30 days then 30mg once daily for life, in combination with anti-inflammatory doses of oral steroids may be effective in early cases 1 . Skin damage may also be reduced by administration of oral retinoids such as acitretin. Actinic keratosis in humans may be helped by the use of a topical immunomodulator such as imiquimod (Aldara), but studies in dogs are lacking. It must be emphasized however that oral and topical medications cannot take the place of sun avoidance in the treatment and prevention of solar dermatitis. Once skin neoplasia has occurred, aggressive surgical resection and screening for cancer spread to draining lymph nodes and internal structures should be performed. Ultimately, the best treatment for canine solar dermatitis is prevention, by educating owners of at risk dogs in the need for sun avoidance starting at a young age.