

## Zinc Responsive Dermatitis

**Transmission or Cause:** Two distinct syndromes have been recognized:

**Syndrome I zinc-responsive dermatosis:** is associated with a defective intestinal absorption of zinc despite being fed a nutritionally well-balanced diet.

**Syndrome II zinc-responsive dermatosis:** occurs in rapidly growing puppies / young dogs being fed zinc deficient diets or diets which have high phytates (plant proteins), diets high in minerals, such as calcium, which can interfere with zinc absorption, and/or are fed cereal or soy based diets. Prolonged gastrointestinal disease resulting in chronic enteritis and diarrhea can also interfere with zinc absorption.

### **Affected Animals:**

**Syndrome I zinc-responsive dermatosis** – This syndrome has been recognized primarily in Alaskan malamutes and Siberian Huskies. Skin lesions typically develop in young adults but onset of disease has been described in older pets.

**Syndrome II zinc-responsive dermatosis** – This syndrome has been described in a plethora of breeds, including the Great Dane, Doberman pinscher, beagle, Boston terrier, German shepherd, and standard Poodle, amongst others.

### **Clinical Signs:**

**Syndrome I** – Skin lesions tend to first occur in September through January and can worsen during estrus or times of stress. Lesions present as red skin with hair loss and crusting around the mouth, chin, eyes and ears. The scrotum, vulva, prepuce and pressure points, such as the elbows and footpads, can also be affected. Lesions are typically itchy.

**Syndrome II** – Skin lesions typically form on pressure points, nasal planum and footpads and present as thickened, crusted plaques. Fissures can form in thickened, crusted areas. Affected dogs can also have enlarged lymph nodes and develop secondary skin infections.

**Diagnosis:** Diagnosis in both syndromes is made through physical examination, a thorough history and biopsy. Hair and serum levels of zinc may also be abnormal; however, analysis of zinc can be difficult and unreliable and so this test is not typically performed.

### **Treatment:**

**Syndrome I** – Oral zinc supplementation typically brings rapid resolution of the clinical signs. Some dogs do not achieve clinical resolution with oral zinc supplementation alone; in those cases, low doses of corticosteroids are beneficial. Some dogs also benefit with the addition of fatty acids in addition to zinc. Intact female dogs should be spayed. Treatment is generally lifelong.



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**Syndrome II** – Treatment is focused on dietary correction and treatment of secondary bacterial and yeast skin infections. Generally lesions should resolve within 2-6 weeks with dietary manipulation, but concurrent zinc supplementation can hasten the resolution. Unlike Syndrome I, zinc supplementation can be discontinued after a few weeks.

**Prognosis:** Prognosis is good with response to therapy.