

CLINICAL KNOWLEDGE INSIGHTS**PARASITIC DERMATOSES****SARCOPTIC MANGE (CANINE SCABIES)**

Clinical Knowledge Insight created by Christina Restrepo, DVM, DACVD

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- Non-seasonal, intensely pruritic, highly contagious infestation of the skin of dogs caused by the mite *Sarcoptes scabiei* var. *canis*
- Zoonotic

WHAT DOES IT LOOK LIKE?

DISTRIBUTION PATTERN:

- Pinnal margins, face, abdomen, chest, elbows, hocks, feet

CLINICAL FEATURES:

- Pruritic papules, crusted papules, alopecia, erythema
- Chronic infestation leads to thick yellow crust, hyperpigmentation and lichenification of the skin and peripheral lymphadenopathy

PATHOLOGIC IMAGE LIBRARY : SARCOPTIC MANGE (CANINE SCABIES)



Adult *Sarcoptes canis* var *canis* mite.



Egg of *Sarcoptes canis* var *canis* mite.



Adult *Sarcoptes canis* var *canis* mite.



Adult *Sarcoptes canis* var *canis* mite.

WHAT ELSE LOOKS LIKE THIS?

- Allergic dermatitis (contact, atopic dermatitis, cutaneous adverse reaction to food (CARF))
- *Malassezia* dermatitis
- Cheyletiellosis
- Otodectic dermatitis
- Pelodera dermatitis

HOW DO I DIAGNOSE IT?

- Pinnal-pedal reflex elicited (non-specific; positive in 50-90% cases)
- Superficial skin scrapings:
 - Multiple sites
 - Higher yield in non-excoriated skin of ear margins, elbows, hocks and in crusts
 - Mite, mite parts, eggs or feces is diagnostic (positive in 20-50% of cases)
- Prophylactic treatment trial
- ELISA test for IgE specific for mites (seroconversion can take up to 5 weeks)
- Histopathology (rarely conclusive)

SKIN SCRAPING VIDEOS: [ExcellenceInDermatology.com](https://www.excellenceindermatology.com) → [Education Library](#) → [Videos](#)

SUPERFICIAL SKIN SCRAPING SECTION: [ExcellenceInDermatology.com](https://www.excellenceindermatology.com) → [Diagnostic Techniques](#)

HOW DO I MANAGE IT?

- Start treatment as soon as diagnosis is made or suspected
- Treatment can be either topical or systemic, and should include all dogs in contact (including asymptomatic carriers)

TOPICAL TREATMENT

- Hair can be clipped (medium to long-hair), the crusts and dirt removed by soaking with an antiseborrheic shampoo, and an acaricidal dip applied.
- Lime sulfur is highly effective and safe for use in young animals; weekly 2-4% lime sulfur dips for 4-6 treatments are recommended.
- Organophosphate dips can be effective

SYSTEMIC TREATMENTS (BASED ON ADMINISTRATION OF MACROCYCLIC LACTONES)

SELALECTIN SPOT-ON FORMULATION

- Selamectin spot-on formulation is approved for scabies treatment.
- Studies show cure with labeled indication of 2 doses at 30-day intervals. 5% of dogs have been shown to harbor live mites at day 30 with 100% cure rate at day 60.

IMIDACLOPRID/MOXIDECTIN

- Imidacloprid/moxidectin spot-on formulation is labeled for scabies treatment in Europe and is available in the United States. Studies show two doses applied at 30-day intervals are 100% effective after 60 days.

IVERMECTIN

- Ivermectin can be given off-label at dosages of 0.2-0.4 mg/kg by mouth once weekly at 7-day intervals for 3 treatments or 0.2mg/kg by subcutaneous injection every two weeks for 2 treatments. At this dosage, the drug is contraindicated in dogs with multiple drug-resistant gene ABCB1 (formerly MDR1) mutation. Idiosyncratic reactions in other breeds may also occur.
- Prior to treatment with macrocyclic lactone/ avermectins, dogs should be heartworm test negative and evaluated for possible neurotoxicity by test dosing or determination of ABCB1- delta1 (MDR-1) gene status. Note toxicity has occurred in dogs with normal ABCB1- delta1 gene function, therefore recommend test dosing by starting with 0.05 mg/kg by mouth daily and gradually increasing to the target dose, the owner should be instructed to stop administration if the animal exhibits mydriasis, hypersalivation, depression, ataxia or any other side effects.

For more information: [Washington State University, College of Veterinary Medicine, Clinical Pathology Laboratory \(www.vetmed.wsu.edu/deptsclinpath/index.aspx\)](http://www.vetmed.wsu.edu/deptsclinpath/index.aspx)

- DO NOT USE SPINOSAD concurrently with high dose, increased frequency macrocyclic lactone/ ivermectin therapy.
- Markedly pruritic dogs can benefit from treatment with glucocorticoids for 5-7 days.
- Secondary bacterial infections should be treated appropriately.

COMMENTS

- Scabies mites can live in the environment for up to 21 days.
- Cleaning and applying an environmental pesticide may be indicated in severe cases or in multiple pet households.
- If lesions are present on in-contact humans, they may persist for 7-14 days, but new lesions should not develop. Development of new lesions indicates inadequate treatment of the dogs, environmental infestation, or true human scabies, which could have been transferred to the dogs. The owners should be referred to a human dermatologist.
- Wild carnivores including foxes and coyotes are common sources of infestation.

SUGGESTED READINGS

- Miller W, Griffin C, Campbell K. Muller and Kirk's Small Animal Dermatology, ed 7, Philadelphia: Elsevier, 2013, pp 315-319.
- Bordeau P, Armando L, Marchand A: Clinical and epidemiological characteristics of 153 cases of sarcoptic acariasis in dogs. *Vet Dermatol* 15:48, 2004.
- Lower KS, Medleau LM, Hnilica K, et al: Evaluation of an enzyme-linked immunosorbant assay (ELISA) for the serological diagnosis of sarcoptic mange in dogs. *Vet Dermatol* 12:315, 2001.
- Terada Y, Murayamaa N, Ikemura H, et al: *Sarcoptes scabiei* var. *canis* refractory to ivermectin treatment in two dogs. *Vet Dermatol* 21:608, 2010.
- Bergvall K: Clinical efficacy of milbemycin oxime in the treatment of canine scabies: A study of 56 cases. *Vet Dermatol* 9:231, 1998.
- Fourie LJ, Heine J, Horak IG: The efficacy of an imidacloprid/moxidectin combination against naturally acquired *Sarcoptes scabiei* infestations on dogs. *Aust Vet J* 84:17, 2006.
- Krieger K, Heine J, Dumont P, et al: Efficacy and safety of imidacloprid 10% plus moxidectin 2.5% spot-on in the treatment of sarcoptic mange and otoacariasis in dogs: results of a European field study. *Parasitol Res* 97:S81, 2005.
- Six RH, Clemence RG, Thomas CA, et al: Efficacy and safety of selamectin against *Sarcoptes scabiei* on dogs and *Otodectes cynotis* on dogs and cats presented as veterinary patients. *Vet Parasit* 91:291, 2000.
- Albanese F, Leone F, Ghibaud G: The therapeutic effect of selamectin and ivermectin regimens in canine sarcoptic mange. *Vet Dermatol* 15:34, 2004.

[The Merck Veterinary Manual. Sarcoptic Mange \(Canine Scabies\). Available at: www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/72005.htm](http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/72005.htm). Accessed February 1, 2013.