

VALLEY FEVER (*Coccidioidomycosis*) In DOGS

Valley Fever is a fungal infection that primarily affects the lungs, though in dogs it spreads easily to bones and other organs. The fungi that cause Valley Fever, *Coccidioides immitis* and *C. posadasii*, are found in the desert regions of the southwestern United States and northern Mexico. The fungus grows in the soil and forms spores that are



inhaled when dirt is disturbed. In the lungs, the spores transform into spherules and grow and spread through lungs and other tissues, causing disease. Valley Fever is not contagious from one dog to another or from dogs to people.



WHERE DOES MY DOG GET IT?

Dogs inhale spores in the air and dust. Dogs often have their noses near the ground or in rodent holes sniffing, which likely increases their risk for inhaling the spores. However, even indoor dogs can contract Valley Fever just from breathing. The majority of Valley Fever in dogs is in southern and central Arizona around Tucson and Phoenix. The central valley of California around Bakersfield is another hot spot.

WHAT ARE THE SYMPTOMS?

The most common symptoms of Valley Fever in dogs are related to the primary lung infection and include ★cough, ★fever, ★lack of appetite, ★lethargy, and ★weight loss. Some or all symptoms may be present. Dogs may go through a very mild form of Valley Fever that is unnoticeable or clears up on its own, or it may be severe enough that the dog needs veterinary care.

Disseminated disease occurs when the fungus spreads from the lungs to other parts of the body. The bones are the most common location of spread, leading to ★lameness or ★back and neck pain. Other symptoms can include ★weight loss and chronic fevers, ★seizures from brain infection, ★swollen lymph nodes, ★draining skin lesions, ★heart failure, and others. Disseminated disease always needs treatment.

HOW IS IT DIAGNOSED?

Physical examination, blood tests, and x-rays of the chest and painful or swollen bones and joints are commonly completed at the initial veterinary visit. If the valley fever blood test, or cocci serology, is negative early in infection, it may be repeated in 3-4 weeks. Culturing the fungus out of body fluids or tissues is a highly specific means of diagnosis. Advanced diagnostics and repeating some tests may be required for difficult cases.

WHAT ARE THE TREATMENTS?

Most dogs sick with Valley Fever require treatment with antifungal drugs. Treatment time averages 6-18 months. Dogs with bone disease or brain involvement may require lifetime treatment to keep disease in check. None of the drugs are completely curative.

Most dogs are treated with oral medications given once or twice daily. The three most common drugs are ★ fluconazole (Diflucan), ★ itraconazole (Sporanox), and ★ ketoconazole (Nizoral). Fluconazole is used most frequently. Unlike itraconazole and ketoconazole, fluconazole is easily absorbed even if your dog is not eating.

Common side effects of all the drugs are vomiting, diarrhea, lack of appetite and elevated liver enzymes. Enzymes will be monitored by tests at your veterinary clinic. Some common drug-specific side effects:

- ★Fluconazole (Diflucan) - thinning of haircoat, dandruff and dry skin, and excessive drinking and urination.
 - ★Itraconazole (Sporanox) - skin lesions that look like abscesses or ulcers.
 - ★Ketoconazole (Nizoral) - lightening of the haircoat, sterility in males.
- Changes will reverse once the dog is off the medication.

Very ill dogs may require hospitalization and intravenous antifungal therapy. Amphotericin B, an IV-only drug, is excellent for difficult cases but has the drawback of toxicity to the kidney. Newer lipid formulations of amphotericin B (Abelcet, Ambisome) with much lower toxicity are often used for life-threatening illness.

VALLEY FEVER CENTER FOR EXCELLENCE

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In 1995, the Valley Fever Center for Excellence (VFCE) was established to promote education, research, and patient care for Valley Fever in Arizona communities. In addition to people, the VFCE initiates and supports, through grants and donations, clinical research to improve care of animals with Valley Fever.

For more comprehensive information on symptoms and diagnosis of Valley Fever in dogs, including sample x-rays of lesions and results of canine Valley Fever studies in dogs supported by the VFCE, please visit the website at www.vfce.arizona.edu.

