
PUBLIC HEALTH ADVISORY

Brown Dog Tick linked to Rocky Mountain Spotted Fever

November 2025

Riverside University Health System – Public Health (RUHS-PH) is issuing this advisory to alert healthcare providers about the increasing reports of Brown Dog Tick infestations and the potential for Rocky Mountain Spotted Fever (RMSF) and other rickettsial diseases in the desert area. Recent regional and national findings indicate that human infections linked to tick-infested dogs and peridomestic environments are emerging more frequently, underscoring the need for early recognition, prompt treatment, and thorough reporting.

Providers play a critical role in preventing severe illness and death by maintaining a high index of suspicion for RMSF and other tick-borne infections in patients presenting with fever, rash, or recent tick or dog exposure. This advisory aims to raise awareness through **One Health lens**, highlighting the link between humans, animals, and environmental health, and strengthen timely reporting and collaboration between clinicians, veterinarians, and public health partners.

Background

The Brown Dog Tick (*Rhipicephalus sanguineus*) is a common tick species found throughout California and there has been a recent increase in these ticks identified in eastern Coachella Valley, specifically the communities of Oasis, Thermal, Mecca, and Northshore. The ticks are capable of completing their entire life cycle indoors or outdoors, often infesting homes, kennels, and animal shelters. Unlike many tick species, it primarily feeds on dogs but can also bite humans, transmitting several pathogens of public health concern.

In California and the southwestern United States, Brown Dog Ticks have been implicated in cases of **Rocky Mountain Spotted Fever (RMSF)** caused by *Rickettsia*. Human infections have been reported in areas with high tick infestations among dogs, particularly in warm, arid regions.

Epidemiology and Clinical Significance

Although no cases have been reported in Riverside County, the recent local increase in Brown Dog Ticks in the eastern Coachella Valley raises concern. The California Department of Public Health (CDPH) recently documented six cases of Rocky Mountain Spotted Fever (RMSF) between July 2023 and January 2024, including three deaths. All infections were linked to exposure in Tecate, Mexico, near the U.S. border. There are additional reports for Baja California this year with 20 cases in Tijuana. These reports highlight the severity of RMSF, the importance of timely diagnosis and treatment, and the need for continued cross-border public health collaboration and provider awareness.

Diseases transmitted by Brown Dog Ticks include:

- Rocky Mountain Spotted Fever (RMSF) – *Rickettsia rickettsii*
- Ehrlichiosis (*Ehrlichia canis*) – primarily in dogs but may affect humans in rare cases

Incubation period: typically, 2–14 days after tick bite.

Clinical Presentation

Rocky Mountain Spotted Fever (RMSF):

- Sudden onset of fever, headache, myalgia, nausea, and vomiting
- Rash usually appears 2–4 days after fever onset, starting on wrists/ankles and spreading to trunk, palms, and soles
- Severe or untreated cases can progress to multi-organ involvement, with case-fatality rates exceeding 20% if not treated promptly

People at Risk

- Sex: Spotted fever rickettsiosis (SFR) cases are reported more frequently in men than in women.
- Age: Individuals over 40 years account for the highest number of reported cases; however, children under 10 years represent the highest number of reported deaths.
- Medical conditions: Persons with glucose-6-phosphate dehydrogenase (G6PD) deficiency are at increased risk for severe or fatal disease.
- Immune status: People with weakened immune systems, such as those undergoing cancer treatment, living with advanced HIV infection, or who have received organ transplants are at higher risk for hospitalization and complications.

Because early symptoms are nonspecific, RMSF and other spotted fever rickettsioses should be considered in any febrile patient with recent tick exposure or contact with dogs infested with ticks. Empiric doxycycline treatment should not be delayed pending laboratory confirmation, regardless of patient age.

Diagnosis and Treatment

- Laboratory confirmation:
 - Indirect immunofluorescence assay (IFA) for *Rickettsia rickettsii* antibodies (paired acute/convalescent sera)
 - PCR or immunohistochemistry (IHC) on biopsy when available.
- Treatment:
 - **Doxycycline** is the treatment of choice for all suspected rickettsial diseases.
 - Treatment should begin immediately upon suspicion.

Action by Healthcare Providers:

- Obtain thorough exposure history for patients with unexplained febrile illness (including tick exposure, contact with dogs, or residence in infested dwellings).
- Educate patients on tick prevention measures.
- Notify RUHS Disease Control for suspected or confirmed RMSF or other rickettsial infections.

Preventive Measures For patients

For detailed information on how to protect yourself, your family, and pets from tick bites, please visit the CDC's prevention page: <https://www.cdc.gov/ticks/prevention/index.html>

Reporting Requirements

RMSF and other rickettsial diseases are reportable under Title 17, Section 2500. Please report all suspected or confirmed cases via CalREDIE, if already enrolled, within 7 days or by reporting to Disease Control by phone at (951) 358-5107 or fax at (951) 358-5102.

Resources

- CDC – Rocky Mountain Spotted Fever: <https://www.cdc.gov/rmsf>
- CDPH – Rocky Mountain Spotted Fever
<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/SpottedFeverGroupRickettsia-RMSFandPCTF.aspx>