



U.S. Environmental Protection Agency  
Pacific Southwest / Region 9



Serving Arizona, California, Hawaii, Nevada, the Pacific Islands and 148 Tribes

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## Weighing Risks to Children from Dogs Wearing Seresto™ Collars

At the Vector-Borne Diseases (VBD) Workshop hosted by Region 9 on August 8, 2016, the Centers for Disease Control and Prevention (CDC) presented information about its work with American Indian communities in Arizona to control Rocky Mountain spotted fever (RMSF) after an outbreak of the vector-borne disease. The CDC developed and implemented a reservation-wide dog-collaring program to combat spread of the disease by dogs.<sup>1,2</sup> The collars used in the program were a new product sold under the brand name Seresto™. Workshop participants expressed concern about any adverse effects of the collars, particularly to children who interact with collared dogs. It is important for communities to weigh the risks of both RMSF and any proposed tick-control approach and then decide what is best for the community.



Child's hand and wrist displaying rash of Rocky Mountain spotted fever.

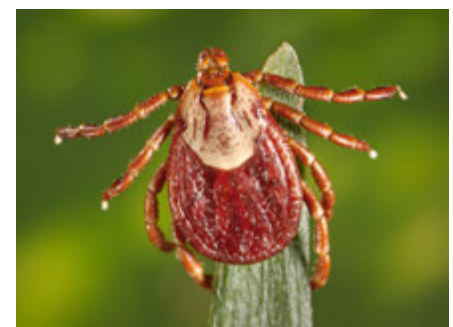
### Rocky Mountain Spotted Fever

The CDC describes RMSF as a serious illness that can be fatal in the first eight days of symptoms, even in previously healthy people, if not treated correctly. The progression of the disease varies greatly. Patients who are treated early may recover quickly on outpatient medication, while those who experience a more severe course may require intravenous antibiotics, prolonged hospitalization or intensive care.<sup>3</sup> At the Region 9 VBD workshop, Naomi Drexler of the CDC reported high mortality rates in Arizona for children under 10 years old who contract RMSF.<sup>2</sup>

Rocky Mountain spotted fever is a tick-borne disease caused by the bacterium *Rickettsia rickettsii*. This organism is transmitted to humans by the bite of infected tick species. In the United States, these include the American dog tick (*Dermacentor variabilis*), Rocky Mountain wood tick (*Dermacentor andersoni*) and brown dog tick (*Rhipicephalus sanguineus*).<sup>4</sup>

### Seresto™ Collars

The collars used in the CDC project are registered by the U.S. EPA (Reg. No. 11556-155). They are made of plastic impregnated with insecticides that are released over time and coat the animal's fur. The active ingredients are imidacloprid (10%) and flumethrin (4.5%). Imidacloprid, which affects the central nervous system of fleas, is a member of the neonicotinoid class of insecticides; flumethrin, which repels and kills ticks, is in the pyrethroid class. The collar label includes the following language: DO NOT LET CHILDREN PLAY WITH THIS COLLAR OR REFLECTORS; KEEP OUT OF REACH OF CHILDREN; CHOKING HAZARD—CONTAINS SMALL PARTS.



Rocky Mountain wood tick. Photo by James Gathany.

In its human health risk assessment, EPA determined that the collars may cause slight skin irritation but will not cause skin allergies. EPA also determined that flumethrin exposures to people placing collars on pets, and to adults and children interacting with pets (including incidental ingestion because of children's hand-to-mouth activities), are below levels of concern. The assessment of imidacloprid identified no risks to humans placing the collars on pets or interacting with pets wearing the collars. The risk of the combination of the two active ingredients, flumethrin and imidacloprid, was not assessed because the two chemicals act in completely different ways. As stated in the precautions on the label, do not allow children to play with the collars. In addition, try to keep the pet away from young children for a day after putting on the collar to minimize exposure.

At the time it registered the Seresto™ collar, EPA determined that the collars could be safely used on adult dogs and puppies of seven weeks of age and older, and on adult cats and kittens of 10 weeks of age and older. Studies also demonstrated no decrease in safety or increase in toxicological hazard to animals associated with wearing collars with reflectors. The only adverse effects observed for adult dogs and puppies was slight reddening of the skin and loss of hair, both of which were temporary conditions that occurred in dogs wearing collars impregnated with insecticides as well as in dogs wearing collars with no insecticide. Since the initial registration, EPA has received reports of undesirable effects to domestic animals using Seresto™ collars. EPA is evaluating those reports as part of the current registration review of flumethrin.

This bulletin addresses only Seresto™ brand collars. Other brands of flea and tick collars have also been registered by EPA.

## **Additional Information and Reporting**

Further information about pesticides and pets is available at [www.epa.gov/pets](http://www.epa.gov/pets).

Report adverse incidents caused by use of pest collars at [www.epa.gov/pesticide-incidents/report-pesticide-exposure-incidents-affecting-pets-or-domestic-animals](http://www.epa.gov/pesticide-incidents/report-pesticide-exposure-incidents-affecting-pets-or-domestic-animals).

**For questions about information in this bulletin, contact Patti TenBrook in the U.S. EPA Region 9 Pesticides Office at (415) 947-4223.**

1 [www.cdc.gov/nceh/ehs/News/Features/2014/rmsf\\_rodeo.html](http://www.cdc.gov/nceh/ehs/News/Features/2014/rmsf_rodeo.html)

2 [www.epa.gov/sites/production/files/2016-08/documents/vector-borne\\_diseases\\_workshop\\_presentations\\_epa\\_region\\_9\\_2016-08-08.pdf](http://www.epa.gov/sites/production/files/2016-08/documents/vector-borne_diseases_workshop_presentations_epa_region_9_2016-08-08.pdf), pp 135 ff

3 [www.cdc.gov/rmsf/symptoms/index.html](http://www.cdc.gov/rmsf/symptoms/index.html)

4 [www.cdc.gov/rmsf/index.html](http://www.cdc.gov/rmsf/index.html)