

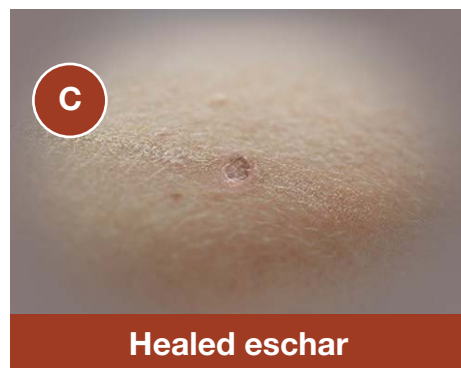
Eschar-associated Rickettsioses

NCEZID - National Center for Emerging and Zoonotic Infectious Diseases

What is an eschar?

An eschar is a lesion that occurs at the site of a tick or mite bite. The eschar forms within a few days (median 5 days) after the bite, and may take several weeks to heal completely. Early eschars can look like small vesicles or like an erythematous plaque (Figure 1A). Eventually, most eschars will develop into a central, 0.5–3.0 cm ulcer. This ulcer is covered by a brown-black crust and typically is surrounded by an annular red halo (Figure 1B). The healed lesion typically appears as a small depressed scar (Figure 1C).

Eschars are an important and early clinical feature of some rickettsial diseases.



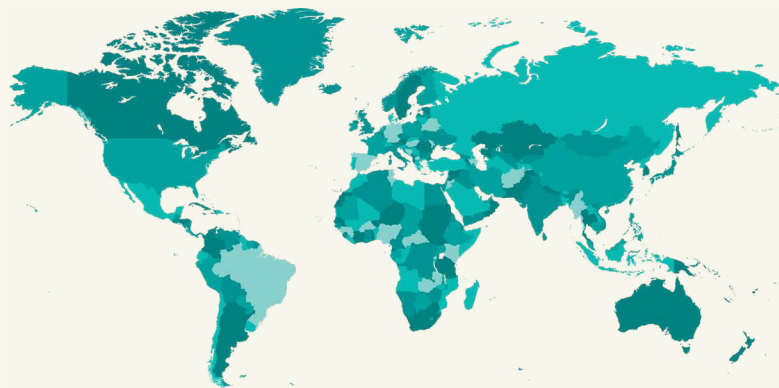
Which rickettsial diseases are commonly associated with an eschar?

In the United States:

- *Rickettsia parkeri* rickettsiosis, caused by *Rickettsia parkeri*
- Pacific Coast tick fever, caused by *Rickettsia* species 364D
- Rickettsialpox, caused by *Rickettsia akari*

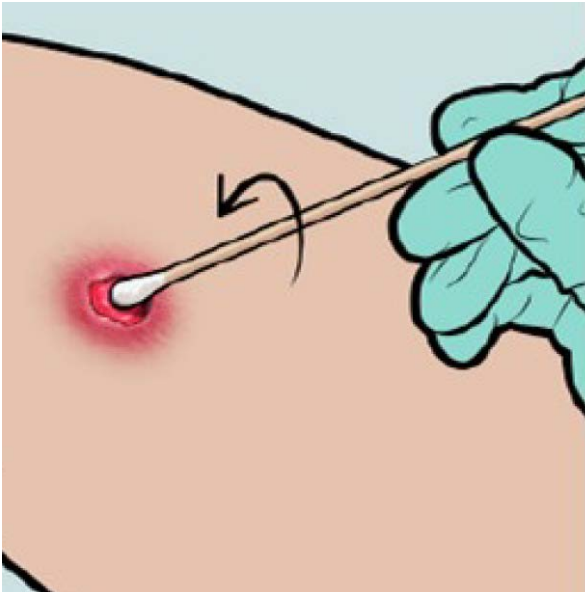
Imported rickettsial diseases:

- African tick bite fever, caused by *Rickettsia africae*
- Mediterranean spotted fever, caused by *Rickettsia conorii*
- Scrub typhus, caused by *Orientia tsutsugamushi*



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Use eschars as a diagnostic sample:



- Eschars can contain large amounts of rickettsial DNA.
- PCR of eschar biopsies or vigorous swabs of eschar areas may provide confirmatory evidence in the early stages of the disease, often before seroconversion has occurred.
- The eschar swab procedure is generally preferred over eschar biopsy by clinicians and patients because it is easy and non-invasive.
- However, an eschar swab does not allow for immunohistochemical or cell culture evaluation.
- Obtain specimen before or within 24 hours of initiation of appropriate antibiotic therapy (i.e. doxycycline).
- Antibiotic treatment should never be delayed to obtain an eschar specimen.

Clinicians interested in submitting eschar swabs or biopsy samples to CDC for diagnostic testing should contact their local or state public health department to coordinate specimen submission to CDC.

For more information:

For more information on how to collect an eschar swab, visit:

<https://www.cdc.gov/ncezid/dvbd/pdf/Collection-Submission-Eschar-Swab-Specimens-Rickettsial-Disease-508.pdf>

For more information on eschar-associated rickettsioses, visit: <https://www.cdc.gov/other/spot-typhus/index.html>

For more information on scrub typhus, visit: <https://www.cdc.gov/typhus/scrub/index.html>