Yale *Environmental Health & Safety*

Borrelia hermsii

Tick-Borne Relasping Fever (TBRF)

TBRF is a risk group 2 bacterium. It is considered a **reproductive pathogen** as infection can cause severe maternal complications, including hemorrhage and respiratory distress, and often leads to preterm labor, miscarriage, or fetal death. Immediate treatment with antibiotics can prevent serious outcomes.

How can I be exposed to TBRF?

- Exposure occurs most commonly by bites from infected soft-bodied ticks.
- TBRF can cross the placenta resulting in congenital infection or neonatal death.
- Laboratory workers may be exposed by needlestick, tick bite, or other percutaneous injury, mucous membrane contact, and handling infected animal tissues.

How can I protect myself from exposure?

- Avoid direct skin contact by wearing protective clothing and gloves.
- Avoid mucous membrane exposure by using eye/face protection for procedures that may produce splashes.
- Avoid respiratory exposure by using a biosafety cabinet or other primary containment device and wearing a respirator for procedures that may produce aerosols, particularly centrifugation, resuspension of pellets, and washing.
- The use of needles, syringes, and other sharp objects should be strictly limited, and additional precautions should be taken when working with animals and ticks.

What should I do if I think I've been exposed?

Wash the affected area immediately for 15 minutes with soap and water and seek medical attention.

What symptoms should I look for after a potential exposure?

Fever, headache, muscle aches, and chills. Other possible symptoms include dizziness, joint pain, nausea and vomiting, and appetite loss.

How long does it take for symptoms to develop?

Symptoms develop between 4-18 days after exposure.

Is there a treatment or vaccine?

There is currently no vaccine for TBRF. Treatment includes a course of antibiotics.

Can I transmit it to other people?

TBRF is usually transmitted by tick bite; however, rare risks include blood transfusion and congenital transmission.

Can I transmit it to my pets?

No, however, animals – particularly wild rodents – can serve as reservoirs for TBRF.

Can it survive on surfaces?

B. hermsii is an obligate parasite, surviving within its soft tick vector and mammalian hosts. It does not survive well on external, inanimate surfaces.

See Pathogen Safety Data Sheet for More Information