

# TIME IS TICKING

The most mysterious and microscopic side of the tick story

**Rickettsia:** A diverse group of bacteria that some ticks carry without symptoms, creating hidden spillover risks for humans.

**Anaplasma phagocytophilum (Human Granulocytic Anaplasmosis):** A bacterium that hijacks white blood cells, moving quietly between deer, rodents, and the ticks that feed on them.

**Babesia:** A parasite that infects red blood cells, cycling between rodents and ticks, and in humans can mimic malaria-like illness.

**TBEV (Tick-borne encephalitis virus):** Persists in tick-rodent cycles and can be transmitted within minutes of a bite, which is why vaccination is recommended in high-risk areas.

**Borrelia (Lyme disease bacteria):** Lives in small mammals and is passed by ticks when they feed long enough, making early tick removal a key line of defense.

Can you find  
5 ticks on  
this poster?

Learn more



Ticks carry a diverse group of microbes—bacteria, viruses, and parasites—that move between wildlife, livestock, pets, and people. *Borrelia* needs hours of feeding to pass from tick to host, while TBEV can transmit within minutes; *Anaplasma* and *Rickettsia* survive inside white blood cells; and *Babesia* invades red blood cells much like malaria. Temperature and humidity affect both the tick and the microbes inside it, shaping how long pathogens survive and where they can spread. Tracking these microscopic passengers helps researchers improve diagnostics, anticipate emerging risks, and guide vaccination and prevention strategies.