

What blood type do ticks prefer?

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To explore the possible association, Žáková and colleagues from Masaryk University in the Czech Republic [conducted a pilot study](#) using an *in vitro* method. Blood from volunteers was placed on the perimeter of filter paper placed on a Petri dish.

Researchers collected 100 nymphal *Ixodes ricinus* ticks in Ruda, near the Brno Reservoir. These are the most common species of ticks in Europe and the Czech Republic. They are also the primary carrier of *Borrelia burgdorferi*, the bacteria which causes Lyme disease.

Ixodes ricinus, also called the castor bean tick, is found primarily in Europe.

Tick behavior was monitored at 1 and 2 minute intervals to determine which drop of blood they preferred.

“It can be stated that the most statistically preferred was blood group A, followed by the second groups – O and AB,” writes Žáková. Type B blood was the least preferred blood group.

The findings need to be replicated in an *in vivo* study, given that other factors could influence the ticks' feeding preferences in a living organism, the authors explain. However, “we cannot use model animals,” writes Žáková, “because different animal species have different systems of blood groups.”

Studies on mosquitoes have shown preferences for certain blood types, according to a literature review by the authors. These studies used human volunteers.

“In one case, they allowed the mosquitoes to feed on the exposed hands of volunteers,” explains Žáková. “In the second study, the experimenters were studying only ‘landing’ preferences of mosquitoes with amputated proboscis.”

So, what about using human volunteers? Unfortunately, “this approach involves increased risk of contracting a tick-borne infection,” writes Žáková.

Or, the authors suggest “amputate the proboscis of the vector and/or use ticks which have been both bred and kept from eggs in sterile conditions to avoid the risk of carrying infectious agents.”

The study's authors conclude that “blood group might be one of the factors determining the feeding preferences of *Ixodes ricinus* ticks.” And they warn, “people with the risk blood type A should take appropriate measures to protect themselves more effectively, and decrease the risk of contracting dangerous zoonotic diseases transmitted by ticks.”

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References:

1. Zakovska A, Janecek J, Nejezchlebova H, Kucerova HL. Pilot study of Ixodes ricinus ticks preference for human ABO blood groups using a simple in vitro method. *Ann Agric Environ Med.* 2018;25(2):326-328.

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