

Orienteering and the risk of tick-borne encephalitis (TBE)

Nearly 3/4 of IOF events

occur in countries where TBE has been reported^{1,†}

† These events may not take place in the same areas where TBE has been reported within these countries

Ticks: The Fast Facts

- 蟀 Ticks live near the ground and can be found both within or outside cities, in parks, gardens, as well as in urban areas such as forests and meadows²
- 蟀 Ticks are found throughout the year but are most active from March to November, when temperatures are above 6°C³
- 蟀 Ticks can cause disease in humans, including Lyme Borreliosis (LB), Crimean-Congo hemorrhagic fever (CCHF) and tick-borne encephalitis (TBE)⁴
- 蟀 The risk of contracting TBE is increasing, due to climate and lifestyle changes^{5,6}
- 蟀 TBE is a rare viral infection which may involve the central nervous system, including the brain and spine³
- 蟀 The TBE virus is most commonly transmitted by infected ticks^{7*}
- 蟀 The TBE virus can be transmitted immediately after a single bite⁸

* The TBE virus can also be transmitted through consumption of unpasteurized milk or milk products, although this is less common.



No treatment

There is currently no cure for TBE^{9,10**}

**In contrast to Lyme Borreliosis, which can be treated with antibiotics⁵

1 in 3

people with TBE may develop long-term complications such as cognitive dysfunction^{11,12}

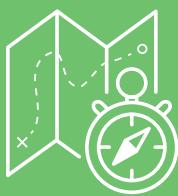


Orienteering and TBE risk

- As orienteering is an outdoor activity, it may put people at risk of TBE^{9,13}
- Different types of orienteering in varying locations can lead to contact in heavily infected tick areas:
 - Foot orienteering is an endurance sport that involves the orienteer navigating themselves with a map and compass while running¹³
 - The orienteer may encounter unexpected forest terrain or rough open hills while running¹³
 - Trail orienteering is a discipline that is centred around map reading in a natural terrain¹⁴
 - Mountain bike orienteering is an endurance sport that involves extremely good bike handling and ability to cope with steep slopes¹⁵
 - While taking part in trail and mountain bike orienteering, it is important to remain vigilant of ticks in the urban and forest terrains. Ensure your kit bag includes insect repellent and a tick removal tool and that long clothing is worn to ward off tick bites

What are the symptoms of TBE?

TBE can appear in two phases, initially presenting with flu-like symptoms including:⁵



High fever



Headache



Fatigue



Nausea



Muscle weakness

The second phase of TBE presents more serious symptoms, with 50% of patients presenting with meningitis, particularly among children.^{16,17} Up to 1 in every 50 people who develop symptoms will die from the infection.¹⁸ These symptoms can include:^{12,19}



High fever



Headache



Nausea



Cognitive changes



Ataxia
(group of disorders
that affect
co-ordination,
balance and speech)



Seizures



Paralysis



Temporary and long-
term loss of
consciousness¹⁶

Ways to help protect yourself against tick bites and TBE whilst orienteering²



Wearing light-colored clothing including long-sleeved tops and long trousers tucked into socks



Use an effective insect repellent and keep it in your kit bag



Check your body for ticks regularly during and after an orienteering event



If you are bitten by a tick, use a pair of fine tipped tweezers or another tick removal tool to remove ticks as soon as possible



TBE vaccination may be available if you are traveling to a risk area for a competition

1. 2018, 2019 and 2020 IOF Events. Data on file. (Accessed: September 2022) 2. Travel Health Pro. Diseases in Brief. Tick borne encephalitis. Available from: <https://travelhealthpro.org.uk/disease/173/tick-borne-encephalitis>. (Accessed: September 2022) 3. Lindquist L, et al. Tick-borne encephalitis. *The Lancet*. 2008;371(9627):1861-71. 4. Centre for Disease Control and Prevention. How ticks spread disease. Available from: https://www.cdc.gov/ticks/life_cycle_and_hosts.html. (Accessed: September 2022) 5. World Health Organization. Weekly epidemiological record. Vaccines against tick-borne encephalitis. WHO position paper. 2011;86(24):241-56. 6. Semenza JC, et al. Vector-Borne diseases climate change: a European perspective. *FEMS Microbiol Lett*. 2018;365(2). 7. European Centre for Disease Prevention and Control. Key messages about tick-borne encephalitis and tick-borne diseases. Available from: <https://ecdc.europa.eu/en/tick-borne-encephalitis/facts-key-messages>. (Accessed: September 2022) 8. Dobler G, Erber W, Bröker M, Schmitt HJ, eds. *The TBE Book*. 4th ed. Singapore: Global Health Press; 2021. Available from <https://tbenews.com/tbe/> 9. Kollaritsch H, et al. Vaccines and vaccination against tick-borne encephalitis. *Expert Rev Vaccines*. 2012;11(9):1103-19. 10. Centre for Disease Control and Prevention. Lyme Disease Available from: <https://www.cdc.gov/lyme/index.html>. (Accessed: September 2022) 11. World Health Organization Regional Office for Europe & European Centre for Disease. Tick-borne encephalitis in Europe. Available from: <https://ecdc.europa.eu/sites/portal/files/media/en/healthtopics/vectors/world-health-day-2014/Documents/factsheet-tick-borne-encephalitis.pdf>. (Accessed: September 2022) 12. Lindquist L, et al. Tick-borne encephalitis. *Handb Clin Neurol*. 2014;123:p:531-59. 13. IOF. International Orienteering Federation. Available from: <https://orienteering.sport/orienteering/>. (Accessed: September 2022) 14. IOF. International Orienteering Federation. Trail Orienteering. Available from: <https://orienteering.sport/trailo/>. Accessed: November 2019. 15. IOF. International Orienteering Federation. MTB Orienteering. Available from: <https://orienteering.sport/mtbo/>. (Accessed: September 2022) 16. Kaiser R. Tick-borne encephalitis. *Infect Dis Clin North Am*. 2008;22(3):561-75. 17. Bogovic P, et al. Tick-borne encephalitis: A review of epidemiology, clinical characteristics, and management. *World J Clin Cases*. 2015;3(5):430-41. 18. European Centre for Disease Prevention and Control. Factsheet about tick-borne encephalitis (TBE). Available from: <https://www.ecdc.europa.eu/en/tick-borne-encephalitis/facts/factsheet>. (Accessed: September 2022) 19. Haglund M, et al. Tick-borne encephalitis - pathogenesis, clinical course and long-term follow-up. *Vaccine*. 2003;21 Suppl 1:S11-8.

