



TBE TOPICS IN 2025: THE EDITOR'S VIEW

Looking back at the snapshots and newsletters published throughout 2025, I have reflected on which developments stood out as particularly significant and impactful, with potential long-term consequences for public health.

The scientific perspective

Two publications, one in *Nature* and one in *PNAS*, discussed in [Snapshot Week 43/2025](#) and [Snapshot Week 46/2025](#), were especially impressive. These studies identified the cell-surface low-density lipoprotein receptor-related protein 8 (LRP8) as a receptor for tick-borne encephalitis (TBE) virus. LRP8 is the first validated receptor protein identified for a flavivirus.

Importantly, LRP8 was shown to function as a receptor for TBE virus strains representing all five known subtypes: European, Far Eastern, Siberian, Baikalian, and Himalayan. These findings establish a central role for LRP8 in viral entry and infection. In the medium to long term, the newly identified interaction between LRP8 and the viral envelope glycoprotein E offers a promising target for the development of antiviral therapeutics, including small molecules, monoclonal antibodies, and receptor antagonists.

This breakthrough raises new hope that effective causal treatments may eventually become available for TBE patients—an area where, to date, no specific antiviral therapy exists.

The medical practitioner's perspective

Tick-borne encephalitis is a potentially life-threatening infectious disease endemic across a wide geographic belt, extending from the United Kingdom in the west to Japan in the east, and from Scandinavia in the north to Mediterranean countries in the south. TBE is preventable through vaccination; however, access to this preventive measure remains limited to only a subset of countries within endemic regions.

Travellers from non-endemic areas who visit TBE-endemic regions face a real risk of acquiring TBE virus infection and developing severe illness. Such cases were discussed in [Snapshot Week 6/2025](#) and [Snapshot Week 21/2025](#), and fatal outcomes have occurred in unvaccinated travellers ([Snapshot Week 50/2025](#)). The number of travel-associated TBE cases reported in scientific journals likely represents only a small fraction of those recorded by the European Centre for Disease Prevention and Control (ECDC) ([Snapshot Week 51/2025](#)).

Moreover, many TBE cases in returning travellers remain undiagnosed, as appropriate diagnostic tools (e.g. TBE ELISA kits) are often unavailable, and awareness of TBE is limited in TBE-free countries. This under-recognition is particularly concerning given the continued geographic expansion of TBE-endemic areas and the increasing incidence of TBE across Europe ([Newsletter June 2025](#)). Notably, TBE virus has recently been detected in England ([Newsletter February 2025](#)) and Belgium ([Snapshot Week 26/2025](#)), countries that were considered TBE-free until recently.

As of late 2025, a total of 32 countries have issued recommendations for TBE vaccination for travellers ([Snapshot Week 51/2025](#)). Nevertheless, in most parts of the world, TBE vaccines are still not available. Consequently, even when awareness exists and travellers are willing to be vaccinated, access to the vaccine is often impossible or logistically complex.

In some cases, last-minute vaccination, such as at an airport pharmacy on the day of departure or shortly after entering a TBE-endemic area by land or sea, may offer an opportunity to receive at least one vaccine dose. However, such approaches are neither feasible nor practical for the majority of international travellers.



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From the editor's perspective, this situation calls for coordinated action by medical professional associations, in collaboration with travel agencies, public health authorities, health insurers, and regulatory bodies. Together, these stakeholders should work to better inform travellers about TBE risks and to identify practical, accessible pathways for providing TBE vaccination.

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