

# TBE in Belgium

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**ECDC risk status: affected** (last edited: date 14.2.2024, data from 2023)

## History and current situation

Until 2018, only imported cases of TBE were detected in Belgium, mainly infected in other parts of Europe such as Estonia, Germany<sup>1</sup>, Austria, Scandinavia, Slovenia<sup>2</sup> and the Czech Republic, but also Kyrgyzstan, Russia and the USA. In the summer of 2020, the first three confirmed autochthonous cases were diagnosed at the National Reference Centre of arboviruses (the Institute of Tropical Medicine, Antwerp, Belgium)<sup>3</sup>. Already in 2018, two cases possibly/probably infected in Belgium were reported, but patients had also traveled during the incubation period. No autochthonous cases have been detected since 2020 (Figure 1). The distribution of reported cases by age and gender is comparable to what is observed in other European countries, with a higher number of cases in males, and more cases in the older age groups (45+).

Based on the current epidemiological findings, Belgium is classified as an affected country for TBE, with possible presence of the virus spread over the territory (Figure 2).

The finding of autochthonous cases was not surprising as several (sero)prevalence studies in sentinel animals suggested that the virus had been circulating at a low level for at least several years. Depending on the animal species, prevalence rates ranging from 0.11% in dogs in 2009 (Belgium) to 9.27% in wild boars in 2019/2020 (Flanders)

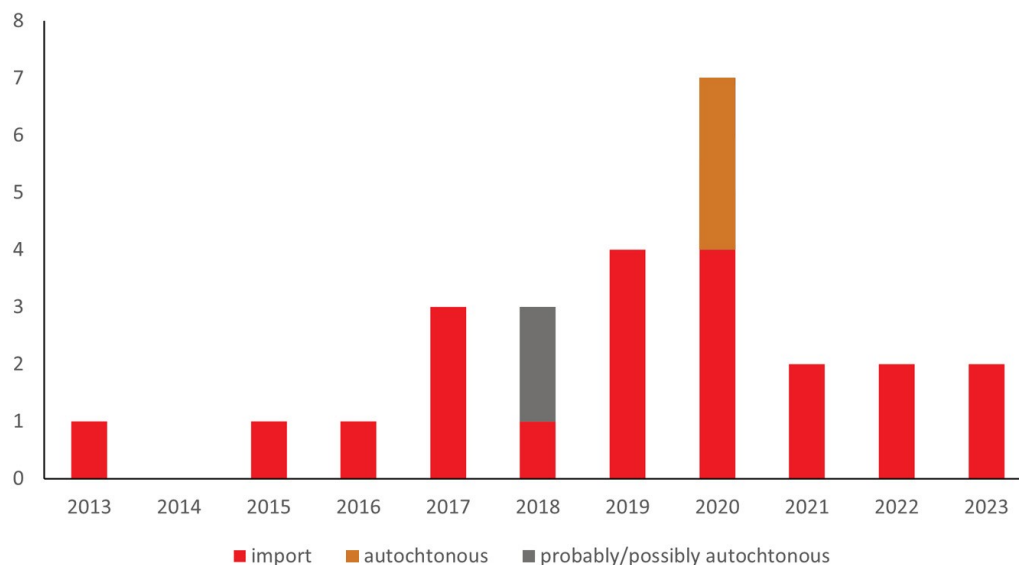
have been reported.<sup>4-8</sup> The results of the study on wild boars in 2020 suggest an increase in TBEV prevalence over the last decade.<sup>8</sup>

Two out of the three patients with an autochthonous infection, diagnosed in 2020, had been exposed in a geographical location adjacent to an area with known TBEV seropositivity in animals.<sup>3</sup>

Several screening programs set up to detect TBEV in ticks, have been undertaken since 2017. Screening for TBEV by PCR in 1,307 ticks collected through flagging in the surrounding nature of the autochthonous cases in 2018, 2019, 2022 and 2023 did not reveal the presence of TBEV (Van Esbroeck, personal communication). Using a citizen science approach based on an existing notification tool for tick bites, 1,599 and 928 ticks removed from humans, 99% of which belonged to *Ixodes ricinus*, were collected across Belgium in 2017 and 2021 respectively. None of the ticks tested positive for TBEV by PCR.<sup>8-10</sup>

In 2019, a seroprevalence study in Flanders among 195 forestry workers exposed to tick bites during professional activities, of which 85% with more than 10 years of exposure and 42% reporting at least one tick bite/month during the tick season, revealed that none had antibodies showing evidence of infection.<sup>11</sup>

**Figure 1: TBE case numbers over time, vaccination status unknown**



## Overview of TBE in Belgium

Table 1: TBE in Belgium	
<b>Viral subtypes, distribution</b>	No information available in humans. No virus-positive animals or ticks have been reported to date.
<b>Reservoir animals</b>	Seropositive cattle and sheep at national level and roe deer and wild boar in Flanders have been identified <sup>4-8</sup>
<b>Percentage infected ticks</b>	No positive ticks have been detected <sup>8-10</sup> (Van Esbroeck personal communication)
<b>Dairy product transmission</b>	No information available
<b>Case definition used by authorities</b>	ECDC case definitions
<b>Completeness of case detection and reporting</b>	No information available
<b>Type of reporting</b>	Annual reporting to the ECDC
<b>Other TBE surveillance</b>	<ol style="list-style-type: none"> <li>1. A national reference center (NRC) for TBE performs laboratory confirmation in suspected human cases</li> <li>2. Ad hoc seroprevalence monitoring in animals<sup>4-8</sup></li> <li>3. PCR testing of ticks collected from humans, from animals and by flagging<sup>8-10</sup> (Van Esbroeck personal communication)</li> </ol>
<b>Special clinical features</b>	No
<b>Licensed vaccines</b>	FSME-IMMUN (Pfizer)
<b>Vaccine recommendations</b>	In the current epidemiological setting, vaccination is only recommended for travelers to endemic regions doing outdoor activities in forested areas during the tick season and for people handling TBEV in a laboratory setting <sup>12</sup>
<b>Vaccine uptake</b>	No data available
<b>National Reference center for TBE</b>	Institute of Tropical Medicine, Nationalestraat 155, 2000 Antwerp, Belgium, +32 3 247 64 45. www.itg.be

**Figure 2: Cumulative sites of TBEV-infection in Belgium, 2018-2023**



■ Animal positive serology ■ Human (probable) autochthonous infection

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