

Employee vaccination: tick-borne encephalitis

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Executive summary

Health Council of the Netherlands

Vaccinating employees can help protect them against disease when they are exposed to viruses and bacteria in the course of their work. Sometimes the employees themselves do not face a particularly high risk, but they can infect others with whom they come into contact in the course of their work or their lives, such as vulnerable patients or young children.

The Health Council's Subcommittee Vaccination of Employees has assessed whether vaccination against the tick-borne encephalitis (TBE) virus should be offered to employees. Infection with the TBE virus can lead to tick-borne encephalitis. People can become infected with the TBE virus after being bitten by an infected tick. Transmission between humans is extremely rare. Accordingly, in terms of vaccination against the TBE virus, the only relevant question is whether the employees themselves need to be protected. Vaccination to protect others is not relevant.

In Europe, TBE is most prevalent in Central European countries and the Baltic states, but in

other European countries, such as Germany, an increasing number of TBE cases have been described in the past two decades. The number of patients recorded as having contracted TBE in the Netherlands is low: 16 as of December 2022. The total number of patients is probably higher. Because TBE is relatively unknown and not subject to a reporting obligation, it is possible that not all cases are known about. In by far the majority of cases, infection with the TBE virus progresses without symptoms or with only mild symptoms. In a small proportion of people infected with this virus, encephalitis or meningitis can occur, sometimes accompanied by spinal cord inflammation or paralysis. If this happens, the consequences can be major. Patients who develop these conditions end up in hospital, sometimes in intensive care. Some make a full recovery, but between one-quarter and half of all patients experience persistent symptoms.

In very rare cases, people can die after being infected with the TBE virus. Out of all people

with a symptomatic infection, up to 1.2% die as a result of the disease.

In general, the risk of contracting TBE from a tick bite in the Netherlands is low, since, as far as is known, only a tiny proportion of ticks are infected with the TBE virus (0.02%). People whose work often takes them into areas with high tick populations (wooded areas, dunes, heathland, parks and gardens) are at greater risk of a tick bite and thus of falling ill as a result of the transmission of the TBE virus. Research shows that nearly a quarter of people who work in the forestry, nature and landscaping sectors are bitten by a tick at least once a month.

With regard to the risk of employees contracting TBE from a tick bite, no statistically relevant data is available for the Netherlands.

However, the committee considers it plausible that people who are regularly bitten by ticks in the course of their work are at a greater risk of TBE and thus a greater risk of the potentially serious consequences of TBE. In occupational

health and safety policies, risk levels are applied in relation to death from exposure to hazardous substances in the workplace. The aim is to keep the additional risk of death from one year of occupational exposure to less than one in a million. The Health Council estimates that the risk of death from TBE for employees who receive more than five tick bites per year is greater than one in a million. No risk levels have been established for serious illness, but the risk of serious illness from TBE, along with the significant probability of persistent symptoms, is many times greater than the risk of death from TBE.

A vaccine that protects against TBE is available in the Netherlands. Research in countries where TBE is common and the vaccine is offered to the general population shows that the vaccine is effective at protecting against TBE, and that it is safe. The committee recommends that this vaccine be offered in the Netherlands to employees in 'green spaces' (such as wooded areas, dunes, heathland, parks and gardens)

who are at risk of being bitten by a tick five or more times per year.

A second group that the subcommittee recommends be vaccinated is employees who could come into contact with the TBE virus directly in the course of their work, in a laboratory for example.

The TBE vaccine provides protection for around three years. It is thus important for revaccination to be offered after that period in situations of ongoing exposure. It is also important to continue to take protective measures, such as reorganising work tasks, wearing clothing that covers the skin and applying insect repellent. After all, vaccination against TBE does not protect against Lyme disease.

Of course, there are also people in our country who regularly spend time in green spaces in a non-professional capacity, and could therefore be bitten by a tick. Individuals who wish to be vaccinated against TBE can do so at their own

expense. The same applies to people intending to travel to a high-risk area. Because the risk of TBE for the population as a whole is currently extremely low in the Netherlands, TBE vaccination is not included in a vaccination programme such as the National Immunisation Programme (RVP). If research shows any increase in that risk, this may change.

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