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Tickborne Encephalitis and Dengue Vaccinesonline

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▶ Tickborne Encephalitis and Dengue Vaccines

No vaccines against tickborne encephalitis (TBE) or dengue are available in the US, but vaccines have been licensed in some other countries.

TICKBORNE ENCEPHALITIS – TBE is a viral disease that is transmitted by the bite of an infected tick or, rarely, by eating unpasteurized dairy (mostly goat) products. It occurs in temperate regions of Europe and Asia; the risk area extends from eastern France to northern Japan, and from northern Russia to Albania. Tick habitats are mainly forested and rural areas up to about 1500 meters (~5000 feet) of altitude. The risk of infection is greatest from April to November.

The Vaccine – Two inactivated cell culture-derived vaccines based on European TBE viral strains are available in Europe (*Encepur*; *FSME-Immun*); they are usually given in 3 doses over 6-15 months, but the second dose can be administered 2 weeks after the first if a rapid immune response is required. *Encepur* can also be given over 3 weeks (0, 7, and 21 days). Two inactivated vaccines based on Far Eastern strains of the virus are available in Russia (*EnceVir*; *TBE-Moscow*); they are usually given in 2 doses (0 and 5-7 months for *EnceVir*; 0 and 1-7 months for *TBE-Moscow*); a rapid schedule of *EnceVir* (0 and 1-2 months) can be used in emergency situations.

Recommendations – Vaccination against TBE is recommended for travelers at high risk of exposure, including those who are planning to work or camp in forested areas or farmland, engage in adventure travel, or live in TBE-endemic countries for an extended period of time.¹

DENGUE – Dengue is a viral disease transmitted by the bite of an infected mosquito. It is endemic throughout the tropics and subtropics and is the leading cause of fever in returning travelers.

The Vaccine – A quadrivalent live-attenuated vaccine (*Dengvaxia* – Sanofi Pasteur) is licensed in 20 dengue-endemic countries in Asia, Latin America, and Australia

for use in persons 9-45 years old, but its availability is restricted because of concerns about using it in seronegative persons, a category that includes most travelers from non-dengue endemic countries. Use of the vaccine in seronegative persons has been associated with an increased risk of hospitalization and severe dengue starting in the third year after the first dose. The vaccine is thought to initiate a first immune response in seronegative persons, increasing the risk of severe disease if a subsequent natural dengue infection occurs. It appears to be efficacious and safe for use in seropositive persons. The vaccine is usually administered in 3 doses given 6 months apart, but immunogenicity appears to be as high after one dose as after 3 doses in seropositive persons.^{2,3}

Recommendations – The World Health Organization (WHO) recommends that countries introduce the vaccine only if vaccination of seronegative persons can be avoided.⁴ No highly specific, rapid, and cost-effective screening test is currently available. ■

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