

FACT SHEET

TICKBORNE ENCEPHALITIS

The following information will help you to become familiar with the epidemiology, symptomatology, ecology, and control of Tickborne Encephalitis.

WHAT IS TICK-BORNE ENCEPHALITIS?

Tickborne encephalitis (TBE) is a group of viral diseases resembling mosquito-borne encephalitides. The initial stage is absent of any central nervous system involvement and the second stage of fever, headache, nausea and vomiting, a stiff neck, and the inability to tolerate bright light follows 4 to 10 days after apparent recovery. The TBE group includes Central European Tickborne Encephalitis, Viral Meningoencephalitis, Louping Ill, Powassan Encephalitis, Biphasic Meningoencephalitis and Diphasic Milk Fever. The complex is commonly referred to as Russian Spring-Summer Encephalitis.

HOW IS TBE TRANSMITTED?

TBE is transmitted by the bite of infected ticks in the genus *Ixodes*. *Ixodes ricinus* and *I. persulcatus* are the principal vectors in Western Europe. TBE is not directly transmitted from human to human. Consumption of raw milk from infected sheep and goats has caused local epidemics in Central Europe.

TBE IN EUROPE.

TBE is found throughout Europe and the former USSR. Areas of greatest concern are rural and forested areas where humans are more apt to encounter infected ticks. *Ixodes* ticks are commonly encountered along wild

game trails in knee to waist high grasses and brush located near forested areas. This disease is seldom found in urban areas. Personnel are most likely to be exposed in the spring and early autumn when ticks are most active and numerous. Most cases of TBE have been reported in soldiers, farmers, trappers, forest workers, and construction workers in regions newly opened for development.

Peak months for *Ixodes* tick activity in Central Europe are May through September. During active periods, each tick development stage (larvae, nymph, adult) searches for a blood meal to complete the life cycle.

TBE is transmitted during all three developmental stages of the tick life cycle. Infected ticks are capable of transmitting the disease throughout their life. Nymphs pose the greatest threat to humans because of their small, easily undetectable size and ability to feed on larger mammals.

WHAT ARE THE SYMPTOMS?

Human infection by the virus does not always result in the development of the disease. About 95% of human infections end with an inapparent infection resulting in development of immunity. The disease progresses with a two-phase pattern. The incubation period of the disease usually lasts from 7 to 14 days.

Tickborne Encephalitis is a reportable condition under the Army Medical Surveillance System. Contact your local Preventive Medicine Activity to report any suspected cases.

TBE progresses from a mild initial stage lasting 2 to 4 days with symptoms including headache, fever, lethargy, vomiting, tremors, weakness and drowsiness. This is followed by a dormant period of about 8 days. The second phase of the illness begins with a high fever, headache, backache, nausea and vomiting, a stiff neck, and the inability to tolerate bright light, often followed by swelling of the brain. Exact diagnosis is not possible based solely on the clinical manifestations. Blood testing is required for confirmation of diagnosis.

HOW IS TBE PREVENTED?

The best course of action against TBE and other tick-borne diseases is prevention. Use the following guidelines when venturing outdoors along trails, in wooded lots, or areas with tall stands of vegetation:

⇒ When available, wear Permethrin treated clothing (sold as Permanone®).

⇒ Wear trousers tucked into boots or socks and a long sleeved shirt that is tucked in at the waist.

⇒ When available, apply repellents containing DEET to exposed skin in accordance with labeled instructions.

⇒ Use the “buddy system” and check for ticks often. Promptly remove attached ticks.

⇒ After returning home, check yourself thoroughly for ticks. Carefully inspect warm moist and hairy areas of your body.

Avoid using local dairy products in known TBE high risk areas.

HOW ARE EMBEDDED TICKS REMOVED?

Ticks embedded into the skin can be removed by using forceps or tweezers to grasp the tick’s mouth parts as close to the skin as possible. Slowly remove the tick by pulling with a single steady motion. Do not jerk, twist, or rip the tick from the attachment site. This will cause the tick mouth parts to be left in the skin, increasing the chances of developing a secondary infection. Clean the wound and apply an antiseptic.

Do not use home remedies to remove ticks! Removing ticks with fire, hot matches, cigarettes, fingernail polish, petroleum jelly, or other such methods can cause the tick to regurgitate it’s gut contents into your blood stream increasing the chances of contracting TBE.

AFTER ANY TICK BITE STAY ALERT FOR THE SIGNS AND SYMPTOMS OF TBE AND OTHER TICKBORNE DISEASES. IF A TICK BITE IS FOLLOWED BY "FLU" LIKE SYMPTOMS AND/OR A SKIN RASH, PROMPTLY SEE A PHYSICIAN FOR EVALUATION AND TREATMENT.



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