



Just the Facts...

St. Louis Encephalitis

- St. Louis encephalitis is a serious viral disease that is spread by infected mosquitoes.
- It is one of several mosquito-borne virus diseases that can affect the central nervous system and cause severe complications and death.
- St. Louis encephalitis is found throughout the United States.
- There is no specific treatment for St. Louis encephalitis.
- Prevention centers on controlling mosquitoes and avoiding mosquito bites.

What is St. Louis encephalitis?

St. Louis encephalitis is a major mosquito-borne disease in the United States. It is one of a group of mosquito-borne virus diseases that can affect the central nervous system and cause severe complications and even death. Other similar diseases are eastern equine encephalitis, western equine encephalitis, and LaCrosse encephalitis.

What is the infectious agent that causes St. Louis encephalitis?

St. Louis encephalitis is caused by the St. Louis encephalitis virus, an arbovirus. Arbovirus is short for **arthropod-borne virus**. Arboviruses are a large group of viruses that are spread by certain invertebrate animals (arthropods), mainly blood-sucking insects. In the United States, arboviruses are usually spread by infected mosquitoes. Birds are often the source of infection for mosquitoes, which can sometimes transmit the infection to animals and, in rare cases, people.

Where is St. Louis encephalitis found?

St. Louis encephalitis is found throughout North, Central, and South America, and the Caribbean, but is a major public health problem mainly in the United States. The virus is found throughout the country, but periodic outbreaks and epidemics have occurred in the Mississippi Valley and Gulf Coast, the western states, and Florida.



How do people get St. Louis encephalitis?

The St. Louis encephalitis virus has a complex life cycle involving common birds (sparrows, finches, blue jays, robins, doves) and specific types of *Culex* mosquitoes that feed mainly on birds. Humans and other mammals are not an important part of the life cycle of the virus. Sometimes, however, people who live in or visit an area where the virus lives can be infected by the bite of an infected mosquito. After infection, the virus invades the central nervous system, including the spinal cord and brain.

What are the signs and symptoms of St. Louis encephalitis?

Symptoms are usually mild and include fever, headache, tiredness, and dizziness. In its more severe form, the disease can cause convulsions and death.

How is St. Louis encephalitis diagnosed?

Diagnosis is based on tests of blood or spinal fluid.

Who is at risk for St. Louis encephalitis?

Anyone can get St. Louis encephalitis, but some people are at increased risk of severe disease:

- Elderly persons
- Persons living in crowded, low-income areas
- Persons who work outside or participate in outdoor recreational activities in areas where the disease is common

What is the treatment for St. Louis encephalitis?

There is no specific treatment for St. Louis encephalitis. Antibiotics are not effective against viruses, and no effective anti-viral drugs have been discovered. Patient care centers on treatment of symptoms and complications.

How common is St. Louis encephalitis?

St. Louis encephalitis is the most common human disease caused by mosquitoes in the United States. Since 1964, there have been about 4,440 confirmed cases of St. Louis encephalitis, with an average of 130 cases per year. Up to 3,000 cases have been reported during epidemics in some years. Many more infections occur without symptoms and go undiagnosed.

Is St. Louis encephalitis an emerging infectious disease?

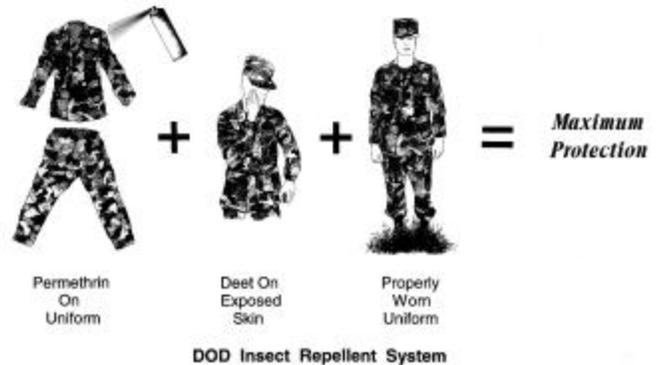
Yes. The virus was first isolated in 1933 during an epidemic in St. Louis, Missouri, and has re-emerged often in epidemics in the United States. The largest outbreaks in 15 years occurred in 1990 in Florida and Texas. The risk of exposure is increasing in urban areas as deteriorating inner cities create new habitats for mosquitoes.

How can St. Louis encephalitis be prevented?

There is no vaccine to prevent St. Louis encephalitis. Prevention centers on public health action to control mosquitoes and on individual action to avoid mosquito bites. To avoid being bitten by the mosquitoes that cause St. Louis encephalitis:

- Use mosquito repellents on skin and clothing
- Use insect repellents that have been approved by the Environmental Protection Agency (EPA). They are safe and effective.
- For your skin, use a product that contains 20-50% **DEET** (N,N-diethyl-meta-toluamide). **DEET** in higher concentrations is no more effective. Do not use **DEET** on infants (children under 3 years old).
- Use **DEET** sparingly on children, and don't apply to their hands, which they often place in their mouths.
- Apply **DEET** lightly and evenly to exposed skin; do not use underneath clothing. Avoid contact with eyes, lips, and broken irritated skin.
- To apply to your face, first dispense a small amount of **DEET** onto your hands and then carefully spread a thin layer.
- Do not inhale aerosol formulations.
- Wash **DEET** off when exposure to mosquitoes ceases.
- For your clothing, use an insect repellent spray to help prevent bites through the fabric. Use a product that contains either **permethrin** or **DEET**. **Permethrin** is available commercially as 0.5% spray formulations.
- **Permethrin** should only be used on clothing; never on skin.
- When using any insect repellent, always FOLLOW LABEL DIRECTIONS.

- For optimum protection, soldiers should utilize the **DOD INSECT REPELLENT SYSTEM**. In addition to proper wear of the battle dress uniform (BDUs), which provides a physical barrier to insects, this system includes the concurrent use of both skin and clothing repellents:



Standard military skin repellent: 33% **DEET**, long-acting formulation, one application lasts up to 12 hours, **NSN 6840-01-284-3982**. Standard military clothing repellents, either: aerosol spray, 0.5% **permethrin**, one application lasts through 5-6 washes **NSN 6840-01-278-1336**; or impregnation kit, 40% **permethrin**, one application lasts the life of the uniform, **NSN 6840-01-345-0237**. Factory repellent-treated uniforms are also available through the military supply system.

Where can I get more information on St. Louis Encephalitis and other forms of mosquito-borne viral encephalitis?

Contact the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Aberdeen Proving Ground, Maryland 21010-5403: DSN 584-3613; CM (410) 436-3613; FAX -2037; or visit our website at: <http://chppm-www.apgea.army.mil/ento>. Additional information can also be obtained from your local, county or state health departments, your health care provider or by contacting the CDC email: dvbid@cdc.gov, or visit their website: <http://www.cdc.gov/ncidod/dvbid/arbor/index.htm>

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