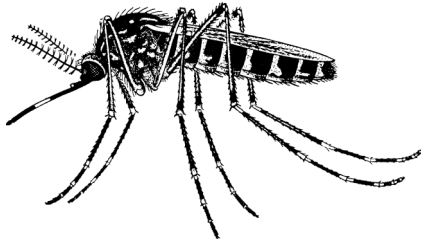
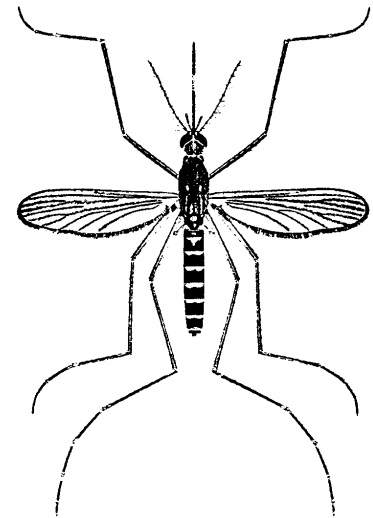




# ENCEPHALITIS & WEST NILE VIRUS



Actual size

**ENCEPHALITIS MOSQUITO (*Culex tarsalis*) - Adult Female**

## General Information

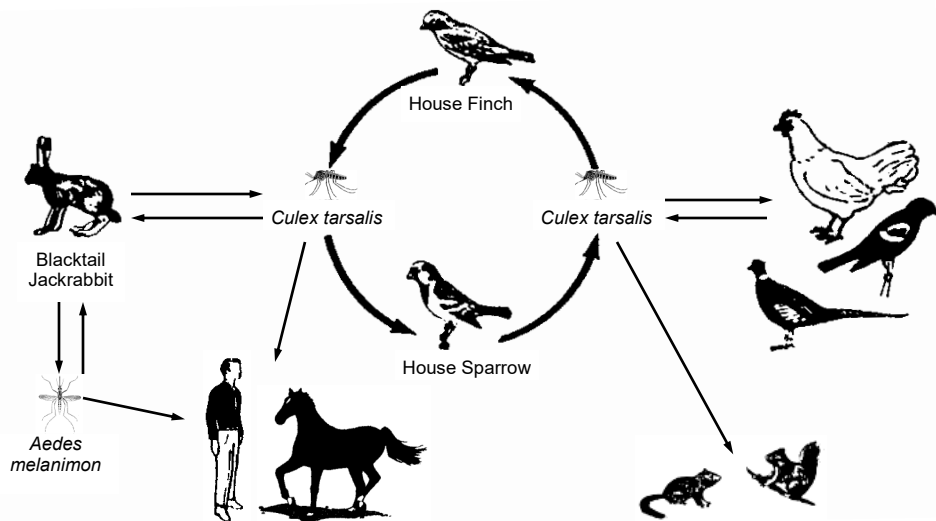
Encephalitis, also known as Sleeping Sickness or Summer Flu, is a mosquito-borne virus disease primarily of birds that occasionally infects humans and horses. At least 3 types of encephalitis are known to cause human illness in California; Western Equine Encephalitis (WEE) and St. Louis Encephalitis (SLE). West Nile Virus (WNV), a new and highly virulent form of Encephalitis, arrived in California in 2003. Native to Africa, the Middle East, and southern and eastern Europe, WNV was first introduced into New York City in 1999. As of 2001, it had spread as far west as the Mississippi River. More than 900 confirmed human cases (18 fatal) of WNV occurred in California during 2005. Nearly 500 horses contracted WNV (200 died) in California in 2005. Native birds are not harmed by native viruses like WEE and SLE, but thousands of wild birds of about 300 species have died from WNV throughout the entire U.S.

In California, the primary vector of Encephalitis is the Encephalitis Mosquito (*Culex tarsalis*). However, a number of mosquito species are capable of transmitting WNV. The Encephalitis Mosquito is distributed throughout California and breeds in wetlands, slow-moving creeks, ditches, reservoirs, water gardens, unmaintained swimming pools, and many other sources of standing water.

## Symptoms of Encephalitis

Symptoms of SLE and WEE appear 7 to 21 days (WNV in 5 to 15 days) after a bite from an infected mosquito. Infants, children, and elderly people are the most susceptible. Many people have no symptoms. Initial symptoms are Flu-like; headache, fever, nausea, and vomiting. This lasts for 5 to 10 days. Aseptic Meningitis (Meningitis-like symptoms) characterized by a severe headache and stiff neck may develop during the next 3 to 10 days. In extremely severe cases, true encephalitis

*continued on back*



**WESTERN EQUINE ENCEPHALITIS - TRANSMISSION CYCLE**

10 days. In extremely severe cases, true encephalitis (inflammation of the brain) may occur, resulting in delirium, stupor, convulsions, and coma. This life threatening condition can last 14 to 21 days. Acute encephalitis caused by SLE, WEE, or WNV can result in mental retardation, motor impairment, or death. Only about 1% of WEE cases actually develop encephalitis, but small children and infants are at highest risk. SLE and WNV are more virulent diseases, with elderly people being the most vulnerable. The fatality rate for individuals under age 40 that are infected with SLE is less than 5%, but for elderly people, the fatality rate ranges from 15% to 23%. Most of the WNV fatalities have been elderly.

A physician cannot confirm a case of Encephalitis without special laboratory tests of blood or spinal fluid that can determine the presence of the virus. Other viruses such as measles and chicken pox can also cause true encephalitis. It is important for physicians to diagnose and report SLE/WEE/WNV cases in order to alert public health and mosquito control agencies so that preventative measures can be taken.

**Where is Encephalitis Found?**

The majority of California’s SLE/WEE cases occur in the Sacramento and San Joaquin Valleys. WEE is responsible for about two thirds of these cases. However, in Southern California counties SLE is the more predominant form. Neither SLE or WEE have ever been detected in Santa Barbara County as of 2005, nor have there been any confirmed human cases.

With WNV now present in California, the Mosquito and Vector Management District, in cooperation with the California Department of Public Health, has expanded its surveillance program for all mosquito-borne viruses. Three techniques are used. Sentinel Flocks of chickens are maintained near mosquito breeding sources with the expectation that Encephalitis, being a disease primarily of birds, will infect the chickens before humans are infected. Chickens show no symptoms of Encephalitis, but laboratory analysis of blood samples obtained from chickens can reveal the presence of Encephalitis antibodies.

The second technique involves trapping live mosquitoes and submitting them to University of California, Davis researchers for laboratory testing to determine if they are carrying live viruses.

The third technique involves **participation by the public**. Beginning in 2002, dead birds (primarily crows, ravens, jays, and magpies, but other species as well) are being tested for the presence of WNV. To be eligible for testing, a bird must be dead less than 24 hours and show no other obvious cause of death. Birds that are stiff or infested with maggots will not be tested. Do **not** handle dead birds. Call the state’s toll free Dead Bird Hotline at **1-877-WNV-BIRD (1-877-968-2473)** to report them.

**Preventing Encephalitis**

Detection of Encephalitis activity in the area would allow the District to warn the public to take precautions against exposure to mosquito bites. The District would also intensify mosquito control efforts. Vaccines are available for horses, but not humans. The best way for individuals to protect themselves from the disease is to avoid mosquito bites. This means reducing outdoor activities during peak mosquito feeding periods (1 to 2 hours after dark), wearing long pants and sleeves, applying insect repellent, eliminating “backyard” mosquito breeding sources, and checking window and door screens for openings. Contact the Mosquito and Vector Management District or your local mosquito control or public health agency if mosquitoes are a problem where you live or work.

S	M	T	W	Th	F	S
1 Flu-like symptoms	2 Flu-like symptoms	3 Flu-like symptoms	4 Flu-like symptoms	5 Flu-like symptoms	6 Meningitis-like symptoms	7 Meningitis-like symptoms
8 Meningitis-like symptoms	9 Encephalitis	10 Encephalitis	11 Encephalitis	12 Encephalitis	13 Encephalitis	14 Encephalitis
15 Encephalitis	16 Encephalitis	17 Encephalitis	18 Encephalitis	19 Encephalitis	20 Encephalitis	21 Encephalitis
22 Encephalitis	23	24	25	26	27	28

**ENCEPHALITIS SYMPTOMS**

**MOSQUITO and VECTOR MANAGEMENT DISTRICT**  
of Santa Barbara County

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Take a look at our Public Information Website: [www.mvmdistrict.org](http://www.mvmdistrict.org)