Mosquito Borne Disease

In the recent past, Florida has suffered from the effects of mosquito-borne disease outbreaks, such as Yellow Fever (YF), Dengue, and Malaria. For the most part these diseases have been eradicated from the United States. Today mosquito borne diseases (also known as arboviruses) like St. Louis Encephalitis, Eastern Equine Encephalitis, and West Nile Virus have become the main focus of mosquito control in Florida. These diseases are found primarily in bird populations. However, some mosquito species that feed on both birds and humans are capable of spreading the disease to humans.

Several arboviruses are found in Polk County. These include:

- **Eastern Equine Encephalitis**
- **West Nile Virus**
- **St. Louis Encephalitis**

REDUCING PERSONAL RISK:
The Centers for Disease Control has outlined measures that each person can take to reduce the risk of contracting mosquito-borne disease.

West Nile Virus (WNV):

Background:
This disease is primarily a disease of birds, but may also be transmitted to humans, horses, dogs, and other mammals. This disease first appeared in the United States in 1999 and spread to Florida by 2001.

This virus is fatal in some birds, especially Crows and Blue Jays. Horses are also susceptible, but there is a vaccine available for them. Humans, while also susceptible, often show no symptoms. (Less than 1% of those infected show symptoms.) The mortality rate of those who have become ill ranges from 3% to 15%, and are highest among the elderly.

It is assumed that the primary mosquito responsible for transmitting the disease to Humans is one or more of the Culex species, of which there are at least 8 in Polk County. Fifty-six mosquito species have been identified as carriers of WNV across the United States.

For more information please **contact us** or visit the **Center for Disease Control – West Nile Virus website**.

Eastern Equine Encephalitis (EEE):

Background:
This is a disease of Horses, but there is a vaccine available. The virus is maintained in birds, which are not affected by the disease. Humans do sometimes contract the disease, but humans are not a preferred target of the mosquitoes carrying this virus and are considered a "dead end" host. This means that while a human can contract EEE, mosquitoes have not been shown to become infected by a human host and spread it to other organisms.

There are normally a few cases of EEE in Florida each year and the disease has shown to have a relatively high mortality rate of approximately 35%. Many of those who survive EEE will have mild to severe brain damage resulting from high fever.

For more information please **contact us** or visit the **Center for Disease Control - EEE (Eastern Equine Encephalitis)**
page.

St. Louis Encephalitis (SLE):

Background:
This viral disease is maintained in birds and transmitted to both humans and horses by the mosquito *Culex nigrapalpus*. While the virus is present in the wild every year, it occurs as a public health outbreak only periodically. This irregular outbreak pattern is the result of the number of susceptible individuals in the bird population coupled with large populations of the transmitting mosquito. These mosquito population increases are triggered by a combination of climactic conditions including drought/rain cycles and individual rain events.

Unfortunately, an accurate prediction model has yet to be developed. Currently, the best method of determining the presence of active viral transmission is the use of sentinel chicken flocks. This information coupled with mosquito population surveillance provides a basis for treating to limit this disease. Humans exposed to the virus, often exhibit no symptoms. Those exhibiting symptoms will often suffer long -term neurological impairment. This disease has a mortality rate of 3% to 30% and is highest in the elderly population.

For more information please **contact us** or visit the **Center for Disease Control – SLE (St. Louis Encephalitis**
page.