

West nile virus



**ASSIGN
BUSTER**

WNV IgM in serum remains detectable for at least 1 to 2 months after infection and sometimes longer therefore serum IgM results must be interpreted in reference to the patient's clinical presentation and travel history, as well as regional WNV activity (Maldin B, et al. 2003) A negative IgM result on an acute-phase specimen strongly suggests absence of WNV infection. A positive IgM result on an acute-phase specimen, accompanied by clinical symptoms consistent with WNV infection, strongly suggests recent infection.

In cases of WNV central nervous system (CNS) infection, IgM is almost always detectable on the first day of clinical illness. Detection of WNV IgM in CSF strongly suggests acute CNS infection, as IgM does not easily cross the blood-brain barrier (Marfin & Petersen 2002). WNV IgG is often detectable as early as 7 days after illness onset and persists indefinitely. Thus, a positive IgG result with a negative IGM result is consistent with past infection. A negative IgG result combined with a positive IgM result in acute-phase specimens suggests recent infection, as does seroconversion from IgG-negative to -positive status from the acute- to convalescent-phase sample.

False-positive WNV antibody results may occur in individuals infected with or recently vaccinated against flaviviruses such as yellow fever, dengue fever, and Japanese encephalitis, as well as those with previous WNV infection or current SLE infection.

When Jason was feeling at his worst, he had extreme malaise, vomiting, and diarrhea. What stage of the illness was he experiencing at that time? Explain the physiologic mechanisms that give rise to the signs and symptoms of

infectious illness. According to the CDC, 70-80% of people who become infected with West Nile virus do not develop any symptoms (CDC, 2013). The incubation period of WNV to the onset of symptoms is 2 to 14 days hence most patients with the virus are asymptomatic and various cases go unreported. WNV has 3 clinical categories: asymptomatic, West Nile Fever (WNF) and neuroinvasive disease (WNND). Jason is currently at the West Nile Fever stage which has an incubation period of 2-8 days and affects about 20% of affected individuals.

West Nile virus has a single-stranded RNA genome. Explain how this virus is able to replicate. In general terms, what are the various effects viruses can have on host cells? The WNV RNA acts as a messenger RNA (mRNA) once released into the targeted cells cytoplasm in preparation for translation of proteins responsible for replication process. The strand of RNA is translated into a single polypeptide which then is cleaved into several proteins needed to construct the viral capsid. The capsid is enclosed in a lipid membrane that blocks premature viral fusion, and a glycosylated envelope