Background

Introduction: West Nile (WN) virus has emerged in recent years in temperate regions of Europe and North America, presenting a threat to public, equine, and animal health. The most serious manifestation of WN virus infection is fatal encephalitis (inflammation of the brain) in humans and horses, as well as mortality in certain domestic and wild birds.

History: West Nile virus was first isolated from a febrile adult woman in the West Nile District of Uganda in 1937. The ecology was characterized in Egypt in the 1950s. The virus became recognized as a cause of severe human meningoencephalitis (inflammation of the spinal cord and brain) in elderly patients during an outbreak in Israel in 1957. Equine disease was first noted in Egypt and France in the early 1960s. The appearance of WN virus in North America in 1999, with encephalitis reported in humans and horses, may be an important milestone in the evolving history of this virus.


Classification:

- **Family:** Flaviviridae
- **Genus:** Flavivirus Japanese Encephalitis Antigenic Complex
- **Complex includes:** Alfuy, Cacipacore, Japanese encephalitis, Koutango, Kunjin, Murray Valley encephalitis, St. Louis encephalitis, Rocio, Stratford, Usutu, West Nile, and Yaounde viruses.
- **Flaviviruses:** share a common size (40-60nm), symmetry (enveloped, icosahedral nucleocapsid), nucleic acid (positive-sense, single stranded RNA approximately 10,000-11,000 bases), and appearance in the electron microscope.