West Nile Encephalitis

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This factsheet aims to provide people affected by Encephalitis, their families, friends and professionals with a better understanding of West Nile Encephalitis.

West Nile fever virus, from the ‘Flaviviridae’ family, was first found in the blood of a person with a high temperature in Uganda in 1937. It was subsequently shown to have a very wide area of distribution that included most of Africa, southern Europe, the Middle East, and even parts of the Far East. In its natural cycle, the virus is transferred mainly between pigeons and crows by ‘Culex’ mosquitoes.

Typically West Nile fever virus causes a non-specific high temperature illness, and until recently brain problems were though to be rare. However, in recent years the virus has spread to new areas and is causing different types of disease. In 1996 an epidemic of West Nile Encephalitis affected several hundred people in Romania, and in 1999 the virus caused an epidemic in New York. Although there were only around 60 cases, this outbreak of West Nile Encephalitis caused considerable alarm because the virus had not previously reached
reached the Americas, or indeed anywhere in the Western hemisphere. How it arrived there is the subject of much speculation.

In 2002, West Nile virus was declared endemic in the United States of America. In that year alone 4156 people were infected and 284 died as a result. The virus has spread across the North American continent into Canada and the Caribbean. Recent reports suggest it has also spread to Central America.

Viruses that are transmitted from one animal host to the next by insects (arthropods) are known as ‘arboviruses’ (arthropod-borne). They have evolved from a variety of backgrounds, belong to different families, and cause a wide range of diseases. Viruses comprise small pieces of genetic material (nucleic acid) whose sole purpose in life is to make more of themselves. Because they don’t have all the ability to do this alone, they have to muscle into ‘host’ cells, and borrow bits of their machinery. The host develops an immune response to fight off this unwanted invasion, and the rest follows as a consequence of this eternal struggle.

**Diagnosis**

People can get infected from the bite of a mosquito that is infected with the virus. The virus is not transmitted from person to person. There is no evidence that a person can get the virus from handling live or dead infected birds. However it is still recommended that barehanded contact with dead animals is avoided.

The time from infection to developing symptoms is usually 5 - 15 days.
Mild infections are common and include a high temperature, headache and body aches, often with skin rash and swollen lymph glands.

Encephalitis results when the virus invades the brain causing damage and an inflammation (swelling) response. The symptoms and signs range from muscle weakness and paralysis, mild confusion and behavioural changes (which may be mistaken for hysteria), convulsions (fits) and deep coma.

West Nile Virus encephalitis is associated with considerable short-term and long-term risks of death and significant disability.

**Treatment and Prevention**

There is no specific treatment for West Nile virus encephalitis. Current management consists of treating the complications of the disease such as high fever and aches, low blood pressure, blood loss, convulsions (fits), or raised intracranial pressure.

The simplest preventative measure is to avoid bites from the mosquitoes that carry the virus. This means wearing long sleeves and trousers, especially during the evening when the mosquito bites and avoiding areas where stagnant water can be found, mosquito larvae need still water to develop. For further protection use an insect spray containing at least 30% DEET (N,N-diethyl-3methlybenzamide) and sleep under bed-nets.

There is no vaccine at present to protect against West Nile virus.
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The authors have used evidence, academic and professional experience in writing this factsheet. If you would like more information on the source material and references the author used to write this page please contact the Encephalitis Society.