CONDITION

West nile fever

West Nile fever is a mosquito-borne viral infection that can cause fever, body aches, and, rarely, serious nervous system problems.

WHAT IT IS
Mosquito-borne viral infection causing fever and sometimes nerve inflammation

BODY SYSTEM
Whole body and nervous system

MAIN SYMPTOMS
Fever, headache, body aches, rash

WHAT CAUSES IT
Infection with West Nile virus

HOW IT IS DIAGNOSED
Blood or spinal fluid antibody tests

MAIN TREATMENT
Supportive care and treatment of complications

CAN IT BE CURED?
No - no specific cure; most recover naturally

IS IT AN EMERGENCY?
Sometimes - confusion, weakness, seizures, or breathing trouble

LONG-TERM OUTLOOK
Most recover; severe nervous system illness can cause lasting disability

Overview

West Nile fever is an illness caused by West Nile virus. The virus usually reaches people through the bite of an infected mosquito.

Most people infected with the virus have no symptoms. Some develop a flu-like illness called West Nile fever. Symptoms can include fever, headache, body aches, joint pain, vomiting, diarrhea, or a rash.

A small proportion of infections affect the brain, spinal cord, or the tissues surrounding them. This is called neuroinvasive illness, meaning that the virus has affected the nervous system. It can cause meningitis, encephalitis, or sudden muscle weakness. These complications can be serious and may require hospital care.

West Nile virus occurs in many parts of the world. In places where it circulates, infections are often more common during mosquito season. Local public health information can tell you when infected mosquitoes have been found in your area.

Symptoms

Symptoms usually begin several days after an infected mosquito bite, although the timing can be longer in some people.

Common symptoms of West Nile fever include:

The illness may feel similar to influenza or another viral infection. Symptoms often improve over several days, but fatigue and weakness can last for weeks.

Nervous system symptoms are less common but more serious. Meningitis is inflammation of the lining around the brain and spinal cord. Encephalitis is inflammation within the brain. Acute flaccid myelitis is damage involving the spinal cord that can cause sudden weakness or paralysis.

Warning symptoms may include:

These symptoms need urgent assessment. They should not be assumed to be a routine part of a fever.

- Fever, headache, and tiredness
- Muscle or joint aches
- Nausea, vomiting, or diarrhea
- A rash, often on the chest, back, or arms
- Swollen lymph nodes, sometimes called swollen glands
- Severe headache or a stiff neck
- Confusion, unusual behavior, or difficulty staying awake
- Seizures
- New muscle weakness, loss of movement, or drooping on one side
- Tremors or problems with balance
- Trouble swallowing or breathing

Causes and risk factors

West Nile virus is mainly spread by mosquitoes. Mosquitoes become infected when they feed on infected birds. An infected mosquito can then pass the virus to a person or another animal through a bite.

The virus does not normally spread through everyday contact. You cannot catch it by touching, hugging, coughing, sneezing, or sharing food with someone who has the infection.

Rare routes of transmission include donated blood, organ transplantation, and transmission during pregnancy, birth, or breastfeeding. Blood donations are screened in countries where West Nile virus is a concern, which lowers the risk from transfusion.

Anyone bitten by an infected mosquito can become infected. The chance of developing severe nervous system illness is higher in older adults and in some people with weakened immune systems. Organ transplant recipients and people with certain long-term conditions, including cancer, diabetes, high blood pressure, or kidney disease, may also have a higher risk of severe illness.

Risk is also affected by where you live or travel, the season, local mosquito activity, and how much time you spend outdoors without protection from bites.

Diagnosis

Symptoms alone cannot confirm West Nile fever because many infections can cause a similar fever, headache, rash, or stomach upset. A healthcare professional will consider your symptoms, recent travel, mosquito exposure, local infection reports, and medical history.

Blood testing can look for IgM antibodies. These are immune proteins that the body produces in response to a recent infection. Testing may be more useful after symptoms have been present for several days because antibodies take time to develop.

If there are signs of meningitis or encephalitis, a lumbar puncture may be needed. This procedure takes a small sample of the fluid surrounding the brain and spinal cord, called cerebrospinal fluid. The sample can be checked for antibodies and signs of inflammation.

West Nile antibody tests can sometimes react to related viruses or to certain vaccines. In selected cases, a more specific neutralizing antibody test is used to confirm the result. Molecular tests that look directly for viral genetic material may help in some situations, particularly in people with weakened immune systems, but a negative result does not always exclude the infection.

Brain scans and other tests may be used to look for complications or different causes. They do not usually confirm West Nile infection by themselves.

Treatment and management

There is no specific antiviral treatment proven to cure West Nile virus infection. Antibiotics like amoxicillin or doxycycline do not work because the infection is caused by a virus, not bacteria.

For uncomplicated West Nile fever, treatment focuses on comfort and recovery. This may include rest, enough fluids to avoid dehydration, and appropriate medicines for fever or pain. A pharmacist or healthcare professional can help you choose an option that is suitable for your age, health conditions, and other medicines.

People with nervous system involvement may need hospital care. Treatment can include intravenous fluids, breathing support, seizure management, and help with nutrition or movement. Rehabilitation may be needed if the illness causes weakness, balance problems, or difficulty with daily activities.

Treatments such as immune therapies and antiviral medicines have been studied, but routine use has not been shown to provide a clear benefit. Care is therefore based mainly on supporting the body and treating complications while the infection settles.

Complications

Most people with West Nile fever recover without nervous system damage. Complications are more likely when the infection involves the brain, spinal cord, or surrounding tissues.

Possible complications include:

Severe nervous system illness can be fatal, although this outcome is uncommon among all people infected with the virus. Recovery can take months, and some people continue to have fatigue, weakness, pain, or thinking difficulties.

- Meningitis or encephalitis
- Lasting muscle weakness or paralysis
- Problems with memory, concentration, balance, or speech
- Difficulty swallowing or breathing
- Seizures
- Reduced independence and a need for rehabilitation

Prevention

There is no licensed human vaccine against West Nile virus. Prevention is based on reducing mosquito bites and limiting places where mosquitoes breed.

Use an insect repellent registered by the relevant authority where you live, and follow the label instructions. Wear long sleeves, long trousers, and socks when practical. Mosquitoes may bite during the day or night, so protection should match local mosquito activity rather than only the time of day.

Keep mosquitoes outside by repairing window and door screens. Air conditioning, when available, can also reduce exposure.

Empty or regularly clean containers that hold standing water around your home. Examples include buckets, plant saucers, toys, bird baths, and uncovered water containers. Mosquitoes can breed in small amounts of water.

If you are visiting an area with West Nile virus activity, check local public health advice before and during your trip. People at higher risk of severe illness may wish to take particular care with bite prevention.

You cannot prevent every mosquito bite, and being bitten does not mean you will develop West Nile fever.

Living with it and what to expect

Mild West Nile fever usually improves on its own. Fever and body aches may settle first, while low energy, weakness, or difficulty concentrating can continue for several weeks. A gradual return to normal activity may be more manageable than trying to resume everything at once.

Routine follow-up may be useful if symptoms are not improving as expected, fatigue is affecting daily life, or you have ongoing pain, weakness, sleep problems, or difficulty thinking clearly.

Recovery from nervous system illness is less predictable. Some people improve substantially over months, while others have lasting weakness, tremors, memory problems, or reduced stamina. Physical therapy, occupational therapy, speech therapy, or other rehabilitation may help with movement, communication, and everyday tasks.

Having West Nile fever does not make you contagious during ordinary contact. Most people are thought to develop lasting immunity after infection, but it remains sensible to prevent mosquito bites because mosquitoes can carry other infections.

When to get medical help

Seek emergency medical help if you or someone with a recent fever develops:

These signs may indicate inflammation of the brain or spinal cord, or another condition needing immediate treatment.

Contact a healthcare professional promptly if fever is persistent or worsening, you cannot keep fluids down, you are passing very little urine, or symptoms follow a known mosquito exposure in an area with West Nile virus activity. Earlier advice is also reasonable if you are older, immunocompromised, or have had an organ transplant.

After a confirmed infection, routine follow-up is appropriate if fatigue, weakness, balance problems, pain, or concentration difficulties continue. New or worsening neurological symptoms should be assessed urgently rather than waiting for a routine appointment.

- A seizure
- Severe confusion, collapse, or difficulty waking
- New paralysis or marked muscle weakness
- Trouble breathing or swallowing
- A sudden severe headache with a stiff neck or neurological symptoms

Common questions

Is West Nile fever contagious?

Not through normal everyday contact. It does not spread by touching, kissing, coughing, sneezing, or sharing household items. Transmission through blood transfusion, organ transplantation, pregnancy, birth, or breastfeeding is possible but rare.

Does every infected mosquito bite cause West Nile fever?

No. Most mosquito bites do not carry West Nile virus, even in areas where the virus is present. Most people who become infected do not develop symptoms.

How long does West Nile fever last?

The fever and body aches often improve within several days, but the illness can last for weeks. Tiredness and weakness may continue after the fever has gone. Nervous system complications can take months to improve and may cause lasting effects.

Is West Nile fever the same as meningitis?

No. West Nile fever is usually a milder illness without nervous system inflammation. However,

West Nile virus can sometimes cause meningitis, encephalitis, or spinal cord inflammation.

Can I get West Nile virus more than once?

Most people are thought to develop long-lasting immunity after infection, so repeat infection appears to be uncommon. Ongoing or returning fatigue does not necessarily mean the virus has infected you again.

Is there a vaccine for West Nile virus?

There is no licensed West Nile vaccine for people. Vaccines exist for horses, but they are not suitable for human use. Preventing mosquito bites remains the main form of protection.

Sources

- Centers for Disease Control and Prevention: About West Nile
- Centers for Disease Control and Prevention: Clinical Signs and Symptoms of West Nile Virus Disease
- Centers for Disease Control and Prevention: Clinical Testing and Diagnosis for West Nile Virus Disease
- Centers for Disease Control and Prevention: Clinical Treatment and Prevention
- World Health Organization: West Nile virus fact sheet
- European Centre for Disease Prevention and Control: Factsheet about West Nile virus infection