

# West Nile Virus Testing

## West Nile Virus Diagnostic Testing 2009 Commences 1<sup>st</sup> June 2009

West Nile virus (WNV) acute diagnostic testing is available routinely from June 1<sup>st</sup> – October 30<sup>th</sup> (outside this time testing is only for those with travel history). Such testing will proceed in 2009, as for 2007 and 2008, using nucleic acid amplification tests (NATs) and serology (IgM, IgG and avidity testing).

West Nile virus (WNV) testing for mild uncomplicated febrile illness is not required for public health purposes and is generally not indicated unless the results will influence clinical management.

### ***Testing is recommended for the following during WNV season in Alberta***

- Those with meningitis, encephalitis, acute flaccid paralysis or other neurological symptoms,
  - Patients with unexplained fever occurring more than 3 days and less than 8 weeks after a blood transfusion,
  - Febrile patients with a history of blood, organ or tissue donation within 8 weeks,
  - Transplant or other immunocompromised patients with unexplained fever and possible exposure to mosquitoes.
  - Pregnant women with unexplained febrile illnesses during WNV season
- Healthy blood donors with positive WNV screening tests at Canadian Blood Services.

***Please submit the following specimens with the ProvLab requisition and provide clinical and travel information.***

<b>Sample</b>	<b>Collection</b>	<b>Test Request</b>	<b>Tests Undertaken and Comments</b>
Acute serum (all patients)	7- 10 ml blood in serum separator tube (gold top)	WNV acute testing (serology)	WNV IgM (IgG if positive) will be undertaken. IgM positive results are obtained in around 40% of cases early in infection.
Acute plasma (all patients)	7 – 10 ml blood in EDTA tube (purple top)	WNV acute testing (NAT)	WNV NAT (PCR or NASBA) will be undertaken. Such testing is needed as an adjunct to IgM testing to identify acute cases before antibody is produced.
CSF (as appropriate)	1 ml dedicated sample in sterile tube.	WNV acute testing (NAT)	WNV NAT will be undertaken. Testing of CSF is not very sensitive and it is recommended that blood samples also be taken in patients with neurological symptoms. Order other tests (e.g. HSV) as appropriate.
Convalescent serum (> 10 days after acute sample) for critical cases	7- 10 ml blood in serum separator tube (gold top)	WNV convalescent testing (serology)	WNV IgM will be repeated and IgG will be tested to check for seroconversion (with avidity testing alongside acute sample if IgG positive)

There is significant clinical overlap between WNV and enterovirus presentation. Thus all acute EDTA blood and CSF samples with a request for WNV testing will also be tested for enteroviruses.

**Notes on interpretation of results:**

- IgM screen on serum and NAT on EDTA blood together detect >95% of cases at the acute stage of illness.
- Convalescent serology may be useful for rare critical cases where IgM and PCR are both initially negative.
- If a false-positive IgM is suspected, a convalescent serum may be useful to confirm or rule out the diagnosis by IgG seroconversion or changes in IgG avidity.
- WNV NAT (PCR or NASBA) can detect viral RNA in CSF but has low sensitivity (10-20%). Blood samples should be taken alongside CSF.

See “How to interpret West Nile Virus Tests” at [www.provlab.ab.ca](http://www.provlab.ab.ca) (under Services/Education) for more detailed information on laboratory result interpretation. You can also contact the Virologist on Call in Calgary or Edmonton (via 403 944 1200 or 780 407-8822) for further advice and consultation.