



June 2008

Dengue Fever - Interpreting Serology Results

To Health Care Providers

Dengue Fever

Dengue fever is an acute viral disease characterized by fever, headache, body pains and rash. In its most severe form, Dengue hemorrhagic fever infected patients experience severe fever and renal failure. This may lead to dengue shock syndrome, which can be fatal. Dengue fever virus is a Flavivirus, which is closely related to Yellow Fever Virus and Japanese Encephalitis Virus. Dengue Fever is transmitted by the bite of an infected mosquito and is associated with travel to the Caribbean, Asia and other endemic areas.

Test Request

The Ontario Public Health Laboratories (OPHL) previously performed Hemagglutination inhibition titres for Dengue fever. As of June 25, 2008, if testing for Dengue fever is requested, the OPHL will perform both IgG and IgM serology using an ELISA technique. This new methodology offers greater sensitivity and specificity.

When requesting Dengue IgG and IgM serology, indicate clearly on the requisition the following information:

- Clinical Information – specify history and location of travel, relevant symptoms with date of onset, including history of mosquito bites

Specimen Requirements

Serum is the preferred sample for Dengue IgG and IgM serology. Haemolysed, icteric, lipemic or microbially contaminated sera are not recommended for testing. Current serological tests have not been validated for cerebral spinal fluid (CSF) samples.

- 1 mL of serum is required
- Transport the specimen to the laboratory as soon as possible after collection. If this is not possible, the specimen should be refrigerated until the time of delivery.

Dengue Fever - Interpreting Serology Results (continued)

Results Interpretation

Cross reactions may occur with other Flaviviruses such as St. Louis Encephalitis, West Nile, Japanese B Encephalitis, Powassan and Yellow Fever. Results should be interpreted in the context of the clinical and travel history of the patient.

IgG ELISA	IgM ELISA	Reported Results
Non-reactive	Non-reactive	No serological evidence of infection.
Indeterminate	Indeterminate	Antibody status inconclusive.
Indeterminate	Non-reactive	Antibody status inconclusive.
Non-reactive or Indeterminate	Reactive	May indicate recent infection.
Non-reactive	Indeterminate	Antibody status inconclusive.
Reactive	Non-reactive	No serological evidence of recent Dengue infection. Evidence of previous Flavivirus infection.
Reactive	Indeterminate	Possible recent Dengue Fever infection, or past infection with non-specific IgM reactivity.
Reactive	Reactive	Indicates recent primary infection.

For Further Information:

- Refer to the Specimen Collection Guide at www.health.gov.on.ca/english/providers/pub/labs/specimen.html
- Contact the WRAPS Laboratory at **416-235-6092**
- OPHL Helpline 1-800-640-7221