

Zika Virus

Zika Virus is transmitted primarily through mosquitos. In most cases, Zika virus infection causes a mild, self-limited illness. Symptoms last for up to one week after being bitten by an infected mosquito. Time from exposure to symptoms is 3–12 days. Around 80% of Zika virus infection cases are likely to go unnoticed. Symptoms of rash, muscle and joint pain, and conjunctivitis typically predominate and usually occur within 2 weeks after travel to a Zika virus affected area. The incubation period is typically between 2 and 7 days.

There is now no doubt that Zika virus infection during pregnancy can cause adverse pregnancy and birth outcomes. Reports of sexual transmission, or suspected infection, in symptomatic patients without travel history and other new claims will continue to expand as more and more evidence becomes available about Zika Virus, and key questions relating to risk are addressed. It is estimated that whilst fewer than 1% of women who contract Zika virus during pregnancy go on to have a baby with microcephaly, in as many as 20% of cases, Zika causes other less immediately obvious forms of fetal brain damage.

- Serum and Urine, both, (< 7 days), Urine only (>7 but ≤14 days) are needed for PCR testing.
- Serum is needed for Antibody testing
- Other specimen types such as CSF or Amniotic fluid may be considered for PCR testing.
- Definitive diagnosis of Zika virus can only be made with laboratory testing.

After onset of symptoms diagnosis of Zika virus:

First week (< 7 days) testing by rRT-PCR of both URINE and SERUM is recommended

Second week (>7 but ≤14 days) testing by eRT-PCR of URINE is recommended

Second week (from 7 days) testing for Zika antibodies IgM and IgG (Serum) is recommended

DIAGNOSIS

Preliminary diagnosis

- Clinical features
- Places and Dates of travel
- Activities



Laboratory Testing

- Viral (rRT-PCR) – urine collected ≤14 days of illness onset)*
- Viral (rRT-PCR) – both serum and urine for early/acute < 7 days after illness onset

A positive ZIKA rRT-PCR result demonstrates current Zika virus infection. Because viraemia decreases over time and recorded dates of illness onset may not be accurate, a negative rRT-PCR result may not rule out virus infection and IgM antibody testing should be performed.

- Virus-specific antibodies IgM and IgM – from Day 7

*Urine Better than Blood for Zika Testing CDC says (Medscape 10/05/2016). Reference Morbidity and Mortality Report (10th May 2016).

Updated test information

TEST	CODE	SAMPLE TYPE	TURNAROUND TIME
PCR testing Blood and Urine < 7 days			
Zika Virus RNA by RT-PCR	ZIKA	B SST/Serum	9–11 days
Zika Virus RNA by RT-PCR	ZIKU	Urine (provide two samples)	9–11 days
PCR and Serology testing > 7 days but ≤14 days			
Zika Virus RNA by RT-PCR	ZIKU	Urine	9–11 days
Zika Antibodies IgM and IgG (Elisa)	ZKAB	B SST/Serum (provide two samples)	9–11 days
Serology testing > 14 days			
Zika Antibodies IgM and IgG (Elisa)	ZKAB	B SST/Serum	7 days

Because recorded dates of illness onset may not be accurate, a negative rRT-PCR result may not rule out virus infection and IgM antibody testing should be performed.

TRAVEL NOTES

- Symptomatic pregnant women, in any trimester, with a positive travel history should undergo testing
- Asymptomatic pregnant women, in any trimester, with a positive travel history at 2 to 12 weeks should undergo testing
- Advice to men who have travelled in Zika areas, or who have or had Zika virus, is to use condoms if their partner is pregnant, or who might become pregnant, for 28 days if asymptomatic and 6 months if symptoms develop.
- All pregnant women should avoid non-essential travel to areas with active Zika transmission



TRANSMISSION

Zika virus is transmitted through the bite of an infected *Aedes* mosquito, which is the same mosquito that transmits dengue, chikungunya and yellow fever.

RT-PCR testing for Zika virus is extremely sensitive and specific; however, due to the short period of viremia, samples must be collected within 14 days of onset of symptoms.

If samples can be collected within 7 days testing by rRT-PCR of both URINE and SERUM is recommended. If samples can be collected after 7 days but before 14 days testing by rRT-PCR of URINE is recommended. The use of PCR nullify the cross-reactivity issues noted with serologic testing for Zika virus.

Because dates of illness onset may not always be accurate, a negative rRT-PCR result may not rule out virus infection and IgM antibody testing should be performed.

Serological testing may indicate the presence of anti-Zika virus IgM and IgG antibodies. Caution is needed with serological results as IgM cross-reactivity is possible with similar mosquito vector infections.

Test information			
TEST	CODE	SAMPLE TYPE	TURNAROUND TIME
Chikungunya (Arbo) IgG/IgM	CHIK	1ml Serum	12 days
Positive IgG/IgM will reflex to PCR confirmation			
Dengue Virus Serology	DENG	1ml Serum	7 days
Dengue Fever PCR	DPCR	A EDTA or B Serum	12 days
Yellow Fever Serology	YELL	1ml Serum	12 days
<i>In all cases, please provide details of patient's travel history.</i>			

SEXUAL TRANSMISSION

There have been reported cases of sexual transmission with the virus spreading to people who have not visited affected countries. It is not known exactly how long Zika virus is present in the semen of men who have been infected, nor is it known how long after exposure Zika virus can be sexually transmitted from a male partner. Men with partners who are pregnant, or who might become pregnant should consider using condoms for 28 days if asymptomatic and 6 months if symptoms develop.

WHO's advice now expressly states that men and women of reproductive age living in affected areas should consider delaying pregnancy. This advice does not say for how long.

TREATMENT

Currently, there is no vaccine or treatment for Zika virus infection. It may be several years before a ZIKA vaccine is widely available.

If you would like additional information regarding this service please contact us on **1800 303 349** or email: **sales@medlabpathology.ie**.

MedLab Pathology Ltd., Unit 3, Sandyford Business Centre, Sandyford Business Park, Dublin 18, Ireland
Tel: +353 (0) 1 2933690 Fax: +353 (0) 1 2933671 Web: www.medlabpathology.ie

MedLab Pathology Limited is a member of the sonic healthcare group of companies. Registered Office: 25-28 North Wall Quay, Dublin 1.
Directors: Eamonn Madden (Irish), David Byrne (British), Colin Goldschmidt (Australian), Christopher Wilks (Australian). Registered in Ireland No: 484276.

TAP3178B/22-06-16/V2