

ZIKA VIRUS and ZIKA VIRUS INFECTION

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ZIKA VIRUS OVERVIEW

- ▶ RNA virus related to dengue, yellow fever, and West Nile viruses
- ▶ Transmitted principally by Aedes mosquito, but other methods of transmission have been documented
- ▶ Virus survival and transmission in semen has been documented
- ▶ For the most part, viral infection is asymptomatic, although rash, muscle and joint pain, and conjunctivitis have been reported
- ▶ Microcephaly is a well documented complication in newborns and additional neurological problems in this population are being reported, including hearing loss and eye and vision abnormalities
- ▶ Adult neurological disease has been reported

ZIKA VIRUS OVERVIEW CONTINUED

- ▶ First outbreak of Zika infection was reported in Micronesia in 2007.
- ▶ Today , Zika is widely disseminated in Central and South America
- ▶ Of U.S. states and territories, Puerto Rico has a significant outbreak of disease
- ▶ Most cases in continental U.S. are in returning travelers, but transmission within U.S. has been documented
- ▶ Full range of Zika related health issues remains unknown and on an almost weekly basis, we learn more about the disease and associated health problems.

ZIKA VIRUS DETECTION

- ▶ Laboratory testing for the virus includes molecular detection in:
 - serum
 - urine
 - semen
 - amniotic fluid
 - placental tissue
 - tears
- ▶ Serological testing for Zika virus IgM and neutralizing antibody is also available
- ▶ CDC has published testing advisories which should be consulted. These contain specifics on timing of testing and the appropriate test to use

ZIKA VIRUS INFORMATION

- ▶ CDC Zika information available at
- ▶ <https://www.cdc.gov/zika/>
- ▶ AMA also provides resources
- ▶ <http://www.ama-assn.org/ama/pub/physician-resources/public-health/zika-resource-center.page>

Zika Virus



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At-A-Glance

[Pregnant Women with Any Lab Evidence of Zika Virus Infection*](#)

- US States and DC: 731
- US Territories: 1,156

*Source: Pregnancy Registries as of September 8, 2016

[More on Outcomes](#)

[Zika Virus Disease Cases Reported to ArboNET*](#)

- US States and DC: 3,176
- US Territories: 17,694

*Source: ArboNET as of September 14, 2016

ABOUT ZIKA
 Overview of Zika and top questions about Zika answered...

TRANSMISSION & RISKS
 Transmitted to people primarily through the bite of an infected mosquito...

SYMPTOMS, TESTING, & TREATMENT
 Most common symptoms are fever, rash, joint pain, or red eyes...

AREAS WITH ZIKA
 Countries and territories with active Zika virus transmission...

PREVENTION
 No vaccine exists...Prevent Zika by protecting against mosquito bites...

MOSQUITO CONTROL
 Prevent mosquito bites, integrated mosquito management, potential range in US, aerial spraying...

PREGNANCY
 Zika and pregnancy, travel information and how to protect yourself if pregnant...

HEALTH EFFECTS & RISKS
 Birth defects, microcephaly and Guillain-Barré Syndrome...

Information for Specific Groups

- Pregnancy
- Women Trying to Become Pregnant

- Laboratories
- State & Local Health Departments

Communication Resources

- Video Resources
- Print Resources
- Infographics
- Zika Communication Toolkits
- [More >](#)

What's New

- Mosquito Control and Bite Prevention Flipbook [PDF - 31 pages]
 THURSDAY, SEPTEMBER 15, 2016
- Get Your Zika Test Results [PDF - 2 pages]
 FRIDAY, SEPTEMBER 09, 2016
- Treat Clothing with Permethrin Wallet Card [PDF - 2 pages]
 FRIDAY, SEPTEMBER 09, 2016
- Puerto Rico: Guillain-Barré Passive Surveillance System [PDF - 1 page]
 WEDNESDAY, SEPTEMBER 07, 2016
- LGBT Community: How to protect yourselves from Zika [PDF - 2 pages]
 THURSDAY, SEPTEMBER 01, 2016

[More >](#)



Information for Specific Groups

- | | |
|---|---|
| Pregnancy | Laboratories |
| Women Trying to Become Pregnant | State & Local Health Departments |
| Healthcare Providers | Law & Policymakers (PHLP) |
| Travelers | Workers (NIOSH) |
| Parents | Blood & Tissue Collection Centers |
| Mosquito Control Professionals | Schools |

[PDF - 1 page]

WEDNESDAY, SEPTEMBER 07, 2016

LGBT Community: How to protect yourselves from Zika

[PDF - 2 pages]

THURSDAY, SEPTEMBER 01, 2016

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Is Your State Prepared for Zika?



CDC has tools for state and local health departments to prepare for Zika.

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Scientific Resources

- [MMWR Zika Reports](#)
- [Resources & Publications](#)





Zika Virus

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Guidance for U.S. Laboratories Testing for Zika Virus Infection



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Overview

Testing of specimens within the United States to determine possible Zika virus infection should be limited to specimens collected from patients meeting CDC's clinical and epidemiological criteria for testing¹. Information on clinical [signs and symptoms](#) associated with Zika virus infection is available. It is important to note that Zika virus infection can cause signs and symptoms similar to those seen in patients with dengue and chikungunya virus infections.

Current information and guidance for the U.S. Zika response is available on [CDC's Zika website](#). Information specific to [state and public health laboratory response](#) is available.

Full testing algorithms are presented at the end of this document.

NOTE: Serum and urine are the primary diagnostic specimens for Zika virus infection.

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- Lab Guidance
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Full testing algorithms are presented at the end of this document.

- [Reporting](#)
- [References](#)
- [2016 Zika Response Algorithm](#)

NOTE: Serum and urine are the primary diagnostic specimens for Zika virus infection.

Symptomatic individuals meeting epidemiological criteria:

Serum and urine collected from symptomatic patients < 14 days post onset of symptoms (DPO) should be tested by Zika virus real time reverse transcriptase-polymerase chain reaction (rRT-PCR). A positive Zika rRT-PCR result in either specimen is sufficient to diagnose Zika virus infection. If Zika virus rRT-PCR results are negative for both specimens, serum should be tested by antibody detection methods.

Serum that has been collected from patients presenting 2-12 weeks from onset of symptoms should be tested first by anti-Zika immunoglobulin (IgM) detection methods. Serum from symptomatic pregnant women should also be accompanied by a urine specimen.

- For non-pregnant symptomatic patients, anti-Zika IgM positive or equivocal result is followed by plaque reduction neutralization test (PRNT) directly.
- For symptomatic pregnant women, anti-Zika IgM positive or equivocal result is followed by rRT-PCR on both serum and urine. Some pregnant women have been reported to have detectable RNA present in serum and/or urine beyond the acute phase. If the rRT-PCR is negative, PRNT is necessary to confirm the presence of anti-Zika antibodies.

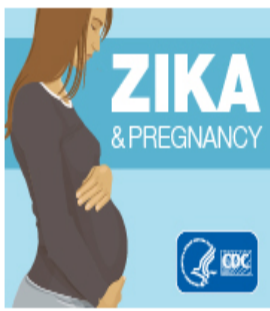
Asymptomatic pregnant women meeting epidemiological criteria for testing:

If serum and urine have been collected from a pregnant woman presenting within 2 weeks of her exposure, serum and urine should be tested by rRT-PCR. If negative, a second serum specimen should be collected 2-12 weeks following return from travel and tested by antibody detection methods.

If serum from a pregnant woman first presenting 2-12 weeks following exposure is collected or living in areas of ongoing transmission, the serum should be tested for anti-Zika IgM. If positive or equivocal, rRT-PCR should be performed on the serum and urine. If rRT-PCR is negative, PRNT should be performed for confirmation of IgM result.

A note on testing of other specimen types:

If testing of cerebrospinal fluid (CSF) from a symptomatic individual is requested for clinically indicated reasons (e.g., neurological symptoms), the specimen(s) must be submitted alongside a patient-matched serum specimen. A Zika virus rRT-PCR positive result from any specimen is indicative of Zika virus infection.



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Types of Zika Virus Tests




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Summary

- **Key Points:** CDC and several state and local health departments are testing for Zika virus. Different diagnostic tests are available to help determine if a person is infected with Zika virus disease. Healthcare providers should contact their state or local health department to facilitate testing.

If you have a [symptomatic patient](#) who [lives in or recently traveled](#) to an area with Zika, he or she may have been infected with other mosquito-borne viruses like dengue or chikungunya that often circulate in the same geographic regions and present with a similar clinical illness.

The [FDA has issued Emergency Use Authorization \(EUA\)](#)  for several diagnostic tools for Zika virus, including the Triplex Real-Time RT-PCR (rRT-PCR) assay and the Zika MAC-ELISA, which are being distributed to qualified laboratories.

Molecular Test for Zika Virus

For symptomatic persons with Zika virus infection, Zika virus RNA can sometimes be detected early in the course of illness. Real-time reverse



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CPT Codes Associated with Zika-related Imaging and Lab Test Procedures

Ebola Resource Center

Zika Virus Resource Center



With infection rates of Zika virus increasing rapidly, physicians should be prepared to handle cases of the virus and answer patients' questions. In the continental United States, Zika cases have been confirmed in returning travelers and infections through sexual transmission have been documented. The Florida Department of Health has concluded that a high likelihood exists that Zika virus infections are being caused by bites of local Aedes aegypti mosquitoes. As a result, a travel warning has been issued for the Wynwood and Miami Beach areas of Miami-Dade County, Florida. The AMA will update this resource center regularly to provide information to the public, physicians and other health care workers as they seek to learn more.

View CDC/AMA Webinar on Zika Virus

THANK YOU FOR YOUR ATTENTION



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