



Zika Virus: Recommendations for Diagnostic Testing, Specimen Collection, and Submission

New York State Department of Health Wadsworth Center Laboratories

This document provides information on specimen collection and submission for Zika virus specimens sent to the New York State Department of Health (NYSDOH) Wadsworth Center.

For testing on the day of delivery, please see “**Zika Virus: Recommendations for Day of Delivery Testing and Specimen Collection**” at https://www.health.ny.gov/diseases/zika_virus/providers.htm.

I. What specimens should be obtained for testing?

The following specimens are needed for routine diagnostic testing:

Patient	Blood (in serum separator tube*)	Whole Blood (in EDTA anti-coagulant tube**)	Urine
Adults	6 ml	0.4-1.0 mL	3-5 ml
Children	3-6 ml	0.4-1.0 mL	3-5 ml
Infants	1.5 – 2.0 ml	0.4-1.0 mL	1-5 ml

*Serum separator tube cap colors include red top, tiger top, speckle top, and gold top. These tubes contain clot activator, so that serum can be readily obtained.

Plastic whole blood tubes with **Lavender tops which contain EDTA anti-coagulant. Do NOT use green or yellow top blood tubes.

Whole blood has been added as an acceptable specimen type because it had been shown to provide an extended window for PCR detection of Zika virus RNA for as long as 4 months from last known exposure. Serum is the priority specimen, and whole blood and urine should only be submitted if serum is also being submitted.

Cerebrospinal fluid (CSF), amniotic fluid, and other body tissues are not routinely used for diagnosis but may be tested under selected circumstances with pre-approval. To discuss submission, please call 518-474-4177 and ask for the Virology Laboratory.

II. How should specimens be prepared and handled?

Label all specimens. Failure to properly label a specimen will result in delayed testing and possible specimen rejection.

Specimens must be labeled with:

- Patient's first and last name
- Patient's date of birth
- Date and time of collection
- Specimen type (serum, whole blood, urine, CSF, etc.)

Seal Specimen Containers

- Close specimen containers tightly and seal with parafilm.

- Leaking specimens will not be tested.
- Hemolyzed serum specimens will not be tested.

Specimen handling for facilities with a -70°C freezer	
Serum	<ul style="list-style-type: none"> ○ Collect blood in serum separator tube(s)* ○ Centrifuge blood within 6 hours; specimens that are not centrifuged immediately should be refrigerated immediately until centrifuged. ○ Transfer serum, using sterile technique, to separate, labeled sterile tube(s) and discard the clot that remains in the blood tube. ○ Store specimen in -70°C freezer and ship on dry ice.
Whole Blood	<ul style="list-style-type: none"> ○ Collect blood in PLASTIC lavender top tube** ○ Store specimen in -70°C freezer and ship on dry ice.
Urine	<ul style="list-style-type: none"> ○ Collect urine in a sterile leak-proof container. ○ Store specimen in -70°C freezer and ship on dry ice.
Specimen handling for any facilities with a refrigerator, (especially those with no -70°C freezer or dry ice)	
<ul style="list-style-type: none"> ○ Process as indicated above. ○ Refrigerate centrifuged serum, whole blood and urine at 2-8°C immediately after collection. ○ Ship overnight with cold packs to lab for arrival within 72 hours of collection. ○ Preferably, specimens should arrive between Monday and Friday, between 9am and 4pm. However, specimens can arrive after business hours and on weekends and holidays. ○ Label the outer packaging: “Store at -70°C upon arrival.” Failure to label the outer packaging correctly may result in specimens not being tested. 	

*Serum separator tube cap colors include red top, tiger top, speckle top, and gold top. These tubes contain clot activator, so that serum can be readily obtained. **PLASTIC Lavender top tubes should be used for whole blood. Do NOT use green or yellow top blood tubes.

CSF and Amniotic fluid	These specimen types are <i>not</i> routinely requested for Zika testing. If these specimens are obtained for other studies, Zika testing may be performed upon consultation with the NYSDOH (call 518-474-4177 and ask for the Virology Laboratory).
CSF	<ul style="list-style-type: none"> ○ Collect in sterile container (tube or cryovial). ○ Store specimen in -70°C freezer and ship on dry ice.
Amniotic fluid	<ul style="list-style-type: none"> ○ Collect in sterile container (15 or 50 ml conical tube). ○ Store specimen in -70°C freezer and ship on dry ice.

III. Who should I notify and what forms do I need to send with specimens?

- Through February 28, 2018, contact NYSDOH via the NYSDOH Zika Information Line at 1-888-364-4723, Monday to Friday 9am to 5pm, for consultation, pre-approval, and to arrange shipment.
- As of March 1, 2018, preapproval for routine diagnostic testing will not be needed. To discuss submission of nonroutine specimen types such as CSF, please call 518-474-4177 and ask for the Virology Laboratory.
- Specimens may be collected and stored as outlined above until shipping can be arranged.
- Wadsworth’s Infectious Disease Requisition (IDR) form:
http://www.wadsworth.org/sites/default/files/WebDoc/1065760803/infectious_diseases_requisition_DOH_4463.pdf

- The IDR form should be completed in full and accompany each specimen being submitted.
- If present, symptoms should be clearly noted on the IDR.

IV. How should specimens be stored and transported?

- Serum, whole blood, and urine specimens may be stored and shipped:
 - If specimens are frozen, ship on dry ice. (Follow shipping regulations for UN 3373 Biological Substance, Category B and UN 1875, Class 9 for dry ice.)
 - If specimens are refrigerated, shipping must occur within 48 hours of specimen collection. Prepare as above so that specimens arrive at the lab within 72 hours after collection.
 - Refrigerate immediately and ship on cold packs.
 - Cold packs should be *frozen* before placed in the box, not just refrigerated.
 - Sufficient cold packs should be used to keep the specimens refrigerated during shipping.
- CSF and amniotic fluid specimens should be handled in the same manner as serum, whole blood, and urine specimens.
- Indicate the temperature shipment requirements on the outside of the package.
- Specimens must be shipped overnight with cold packs or dry ice to:

The Wadsworth Center, David Axelrod Institute
120 New Scotland Avenue
Albany, NY 12208
- Delivery to Wadsworth Center should occur between Monday and Friday, preferably between 9am and 4pm. However, deliveries are accepted at all hours and any day of the week.

V. How will test results be reported?

Zika test results will be sent to the provider or facility listed as the submitter. If the submitter has a NYSDOH Health Commerce System account with Clinical Laboratory Information Management System (CLIMS) access, results will be transmitted electronically. Otherwise, results will be mailed.

VI. Other Resources

- NYSDOH: https://www.health.ny.gov/diseases/zika_virus/providers.htm
- “Preventing Transmission of Zika Virus in Labor and Delivery Settings Through Implementation of Standard Precautions—United States, 2016.”
<https://www.cdc.gov/mmwr/volumes/65/wr/mm6511e3.htm>