



ZIKA LABORATORY TESTING GUIDANCE

Appropriate Clinical Specimens for Laboratory Testing of Suspected Cases					
	Symptomatic Suspect Cases or Asymptomatic Pregnant Women				
	Serum	Whole Blood (EDTA)	CSF	Urine [§]	Other [¶]
RT-PCR [§]	YES	YES	YES	YES	YES
Serology: IgM with PRNT confirmation [†]	YES	NO	YES	NO	YES

[¶] CDC will consider testing other specimen types (e.g., saliva, placental tissue, umbilical cord, fetal and other tissues) on a case by case basis.

[§] RT-PCR is the preferred method and urine is the preferred specimen for confirming an acute case.

[†] PRNT (plaque-reduction neutralization test) may confirm cross-reactive IgM tests by measuring virus-specific neutralizing antibodies.

Recommended Diagnostic Testing

CDPH provides diagnostic testing (PCR, IgM and PRNT serology) for Zika virus as well as dengue and chikungunya viruses. Zika virus testing performed at VRDL is described below.

Health care providers wishing to arrange testing for Zika virus must contact your local public health department for consultation and approval.

- For any suspect cases of Zika virus infection, testing should be considered for the following viruses:
 - Zika
 - Chikungunya
 - Dengue
- CDC will **only** perform diagnostic testing for Zika virus that is not performed in VRDL.

RT-PCR Testing: VRDL is currently using the Triplex Real-time RT-PCR assay which is validated for serum, whole blood, CSF, urine and amniotic fluid. Whole blood, CSF, urine or amniotic fluid **must** be accompanied by a serum.

- Serum, whole blood or CSF:** PCR can detect Zika, chikungunya, and dengue viruses.
 - Collect sample within 14 days of illness onset (symptomatic individuals) or last potential exposure (asymptomatic pregnant women).
 - Collect at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.
 - For CSF or whole blood (EDTA required), at least 1 ml is required.
- Urine or Amniotic fluid:** PCR can detect Zika virus only.
 - Collect urine within 21 days (3 weeks) of illness onset.
 - Asymptomatic pregnant women may submit a urine sample if collected within 14 days of last exposure.
 - Amniotic fluid: collect if amniocentesis is performed.
 - Collect at least 2 mls of fluid.
 - Urine specimen cups leak and are not recommended for shipping. To avoid leakage of the urine sample, transfer to a small (3-5 ml) sterile screw-cap tube and use parafilm to seal. Place the tube in a Ziploc bag with absorbent material. It is not necessary to spin or process the urine.

Serology: IgM and PRNT testing

- Asymptomatic pregnant women:** A serum sample should be collected between 2 and 12 weeks after last possible exposure.
- Symptomatic cases:** Optimal collection of an acute serum is >3 days after illness onset, although serum collected any time between illness onset to 12 weeks after onset will be accepted. **NOTE:** If serum is collected <2 weeks from onset of illness and IgM to Zika virus is not detected, a convalescent-phase serum specimen collected <12 weeks from illness onset should be considered for further testing.
- IgM antibodies against Zika virus, dengue viruses, and other flaviviruses (e.g., yellow fever virus, West Nile virus) can cross-react

possibly generating false positive results in serological tests; therefore, all IgM positive samples will be reflexed to RT-PCR and/or PRNT to discriminate among these viruses.

Other tissues: Consult with VRDL prior to collecting other tissues.

Specimen storage and shipping: Store all specimens at 4°C. Ship on cold packs within 24 to 72 hours.

Specimen shipment – Complete Following forms

- VRDL General Purpose Specimen Submittal Form Lab 300: <http://tinyurl.com/VRDLLab300>
- The 2017 CDC DASH (Only required for special test requests on saliva, semen, or tissue samples. Please consult with VRDL before sending.)

The following information is **required**:

- Your local public health department contact information as the “Intermediate Submitter”
- Date of symptom onset. For asymptomatic pregnant women:
 - Under “Clinical Diagnosis” choose “asymptomatic”
 - Leave “Onset dates” blank
- Pregnancy status and estimated due date, as applicable (testing will be expedited for pregnant women)
- List of clinical symptoms
- Travel history – list countries visited and date of departure

Please email electronic copies of CDC DASH forms to VRDLsubmittal@cdph.ca.gov.

- See <http://www.cdph.ca.gov/programs/vrdl/Pages/ZikaInfo.aspx> for detailed instructions and examples of completed forms.
- Specimens should be shipped as directed by the local public health laboratory.** For those jurisdictions without a local Public Health Laboratory, specimens can be shipped and directed to the VRDL using the following address:

Specimen Receiving
CDPH VRDL
850 Marina Bay Parkway
Richmond, CA 94804

Questions about specimen collection, submittal, or shipping: Please contact the VRDL Medical and Epidemiology Liaison Section, (510) 307-8585, or email VRDLsubmittal@cdph.ca.gov.

Other resources: <http://www.cdc.gov/zika/index.html>