



ZIKA LABORATORY TESTING GUIDANCE

Appropriate Clinical Specimens for Laboratory Testing of Suspected Cases *					
	Symptomatic Suspect Cases				Asymptomatic Pregnant Women
	Serum*	CSF	Urine*†	Other†	Serum only
RT-PCR [§]	YES	YES	YES	YES	NO
Serology: IgM with PRNT confirmation†	YES	YES		YES	YES

* CDPH is validating a PRNT assay to detect Zika-specific antibodies in serum and RT-PCR to detect Zika virus in urine.

† CDC will consider testing other specimen types (e.g., urine, amniotic fluid, tissues) on a case by case basis.

§ RT-PCR is the preferred method 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 is now providing diagnostic testing (PCR and IgM serology) for Zika virus as well as dengue and chikungunya viruses. All Zika virus testing will be performed at VRDL as 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
- CDPH is validating urine as possibly a more sensitive specimen type for detection of Zika virus by RT-PCR (see below for guidance).
- CDC will **only** perform diagnostic testing for Zika virus that is not performed in VRDL.

RT-PCR Testing: Testing performed on **symptomatic cases** only.

- **Serum or CSF:** Collect within 7 days of illness onset.
 - Collect at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.
 - For CSF, at least 1 ml is required.
- **Urine:** (Serum **must** be submitted with a urine sample.) Collect within 30 days of illness onset.
 - Collect **3-5 ml only** of urine. Urine specimen cups leak and are not recommended for shipping.
 - To avoid leakage of the urine sample, transfer 3-5 ml to a small sterile screw-cap tube (e.g., 15 ml conical 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 blood sample should be collected between 2 and 12 weeks after return of travel.
NOTE: A negative serology test obtained 2-12 weeks after travel cannot definitively rule out Zika virus infection.
- **Symptomatic cases:** Optimal collection of acute blood is >3 days after illness onset, although serum collected any time after onset will be accepted. Serum collected within 7 days of illness onset may be falsely negative.
- If initial IgM testing is negative and Zika is strongly suspected, a second convalescent serum should be collected.
- 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 PRNT to discriminate among these viruses.

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

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

Specimen shipment – Complete Following forms

1. **VRDL General Purpose Specimen Submittal Form** Lab 300: <http://tinyurl.com/VRDLLab300>
2. The **2016 CDC DASH** (not required for serum – complete form for all other sample types) 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 from risk area
- See <http://www.cdph.ca.gov/programs/vrdl/Pages/ZikaInfo.aspx> for detailed instructions and examples of completed forms.
- Please email electronic copies of all forms to VRDLsubmittal@cdph.ca.gov.
- **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>