MAYO CLINIC LABORATORIES

Mosquito-borne Disease Laboratory Testing

Clinical suspicion of a mosquito-borne disease (MBD) based on the following:
- Symptoms including, but not limited to:
  - Fever
  - Headache
  - Meningitis
  - Encephalitis
  - Meningoencephalitis
- Time of year (eg, during active mosquito seasons)
- Exposure history (refer to the following for potential exposure guidance):
  - https://www.cdc.gov/mosquitoes/php/arbonet/
  - https://wwwnc.cdc.gov/travel/destinations/list

Testing should be tailored based on clinical presentation, exposure history, and known endemic mosquito-borne pathogens

Malaria suspected

Refer to the Malaria Laboratory Testing Algorithm for information

Filarial infection suspected

Order:
- FIL / Filaria, Blood

If FIL is negative, consider:
- FFAG4 / Filaria, IgG4 Antibody, ELISA

Arbovirus infection suspected

Specimen collected ≤7 days after symptom onset

- Real-time reverse transcription polymerae chain reaction (PCR) and serologic testing are recommended
- Serologic testing of spinal fluid (CSF) should be performed concurrently with or following serologic testing of serum

If mosquito exposure occurred **within** the United States (US), consider the following tests:
- ARBOP / Arbovirus Antibody Panel, IgG and IgM, Serum
- ABOPC / Arbovirus Antibody Panel, IgG and IgM, Spinal Fluid

If mosquito exposure occurred **outside** of the US, consider the following tests:
- CHIKV / Chikungunya IgM and IgG Antibody, Serum
- CHIKS / Chikungunya Virus, PCR, Molecular Detection, Serum
- CHIKC / Chikungunya Virus, PCR, Molecular Detection, Spinal Fluid
- DENGM / Dengue Virus Antibody, IgG and IgM, Serum
- DENVP / Dengue Virus Antibody/Antigen Panel, Serum
- DNSAG / Dengue Virus NS1 Antigen, Serum
- DENGS / Dengue Virus, Molecular Detection, PCR, Serum
- DENGC / Dengue Virus, Molecular Detection, PCR, Spinal Fluid
- VZIKM / Zika Virus, IgM Antibody Capture ELISA, Serum
- VZIKU / Zika Virus, PCR, Molecular Detection, Random, Urine
- VZIKS / Zika Virus, PCR, Molecular Detection, Serum

If mosquito exposure occurred in any region, consider the following tests:
- WNS / West Nile Virus Antibody, IgG and IgM, Serum
- WNC / West Nile Virus Antibody, IgG and IgM, Spinal Fluid
- WNVBL / West Nile Virus, RNA, PCR, Molecular Detection, Blood
- WNVUR / West Nile Virus, RNA, PCR, Molecular Detection, Random, Urine
- WNVS / West Nile Virus, RNA, PCR, Molecular Detection, Serum
- WNCSF / West Nile Virus, RNA, PCR, Molecular Detection, Spinal Fluid

Specimen collected >7 days after symptom onset

- Serologic testing is recommended If mosquito exposure occurred **within** the United States (US), consider the following tests:
- ARBOP / Arbovirus Antibody Panel, IgG and IgM, Serum
- ABOPC / Arbovirus Antibody Panel, IgG and IgM, Spinal Fluid

If mosquito exposure occurred **outside** of the US, consider the following tests:
- CHIKV / Chikungunya IgM and IgG Antibody, Serum
- DENGM / Dengue Virus Antibody, IgG and IgM, Serum
- DENVP / Dengue Virus Antibody/Antigen Panel, Serum
- DNSAG / Dengue Virus NS1 Antigen, Serum
- VZIKM / Zika Virus, IgM Antibody Capture ELISA, Serum

If mosquito exposure occurred in **any region**, consider the following tests:
- WNS / West Nile Virus Antibody, IgG and IgM, Serum
- WNC / West Nile Virus Antibody, IgG and IgM, Spinal Fluid

If Powassan or Heartland virus is suspected see Acute Tick-Borne Disease Testing Algorithm.

If any of the following are suspected, contact your local public heath department or the CDC for testing options:
- Bourbon virus
- Jamestown Canyon virus

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