



## Zika Virus Update for Healthcare Professionals

Updated September 15, 2016; italicized text indicates clarification of wording contained in previous versions.

### What is Zika virus?

Zika virus is *an emerging* Flavivirus transmitted by *Aedes* mosquitoes. Originally found only in Africa and Asia, the virus was first reported in the Western Hemisphere in 2015 and *since then its range has been steadily expanding*. Zika is from the same family of viruses as Dengue and West Nile Virus that are also transmitted by *Aedes* mosquitoes. Mosquito-borne transmission is overwhelmingly the dominant mechanism of Zika transmission. There have been reports, outside of Canada, of both sexual transmission and transmission of Zika virus through the blood supply. While most infections are asymptomatic or mild, Zika virus infection during pregnancy has been shown to cause microcephaly and other obstetrical complications. Rare post-infectious neurological complications have also been reported.

### Who is at risk of acquiring Zika virus?

- 1) People from British Columbia who travel to regions where Zika virus is circulating. More than 40 countries *in the Americas*, Oceania and the Caribbean have reported Zika cases, as well as some countries in Asia and Africa. Due to differences in testing and reporting, the risk of acquiring Zika infection when travelling to countries in a region not currently reporting Zika cases is unknown and likely to change. The absolute risk to a traveller for each particular destination is unknown at this time.

A current list of [affected countries](#) is *maintained by the World Health Organization, which can be accessed via the Government of Canada Zika Virus website*.

- 2) Sexual partners of men who have recently visited areas where the Zika virus is circulating and may have become infected.
- 3) A fetus of a woman who has acquired Zika infection through either travel to countries, as above, or through sexual transmission from a man who became infected through travel, as above.

### What are the symptoms and complications of Zika virus infection?

**Up to 80% of those infected are asymptomatic.** Symptomatic illness is generally mild, with acute onset of low-grade fever, maculopapular rash, arthralgia, or non-purulent conjunctivitis, lasting from several days to one week. Headache and myalgias are also reported. Severe disease is uncommon, and death is very rare. Zika virus infection in pregnancy has been found to cause microcephaly and is likely associated with other abnormalities in fetal and placental development. The incidence of microcephaly following pregnancy-associated infection is unknown; however, some estimates suggest microcephaly occurs in at least 1% of affected pregnancies. Current data suggests that the overall incidence of congenital defects and obstetrical complications may be higher. Guillain-Barré syndrome has been reported following Zika virus infection at an incidence of 2/10,000 (similar to incidence after campylobacter infection). Other neurologic conditions have been reported in cases as very rare complications of infection and include acute disseminated encephalomyelitis (ADEM) and myelitis.

There is currently no specific treatment for, or vaccine against, Zika virus infection.

### Are cases expected in Canada?

Cases of Zika virus have been confirmed in Canada **in association with travel to a Zika virus affected area: either among returning travellers** or in isolated instances, as the result of sexual transmission from a returning male traveller. The risk of vector-borne Zika virus transmission in Canada is very low as the mosquitoes known to transmit the virus are not established in Canada.

Cases of Zika virus are reportable to the medical health officer.

## Prevention

There are no vaccines or medications currently available to prevent Zika virus infection. **It is advised that pregnant women and women trying to get pregnant during their travels or immediately afterwards, consider postponing travel to areas where Zika virus is being transmitted.** There are no specific recommendations for others to avoid travel. If pregnant women, and those trying to conceive, are unable to avoid travel they should follow travel recommendations including seeking travel medicine advice prior to departing.

All travellers are advised to take precautions to avoid mosquito bites throughout the day and night, both indoors and outdoors, and are advised to:

- wear long-sleeved shirts and long pants,
- use a recommended insect repellent according to instructions on the product label; those containing **DEET (20%)** or **icaridin (20%)** are effective and safe for pregnant women,
- use permethrin-treated clothing and gear,
- stay and sleep in screened-in or air-conditioned rooms,
- if staying outside, sleep under a mosquito bed net

Additional information is available on the [Vancouver Coastal Health Travel Clinic](#) webpage.

## Pregnancy and sexual transmission

Information on this topic is changing rapidly with some of the current recommendations based on expert opinion only. This guidance will be updated frequently as new data become available.

*As most infections are asymptomatic, the advice is provided both in the context of an exposed and potentially infected traveller; as well as for patients diagnosed with Zika virus infection.*

### 1) Women as travellers

- a. It is recommended that women be advised of the **risks of conceiving a child in a region where Zika virus is circulating**, be provided with information on how to prevent both mosquito bites and pregnancy, and postpone travel if possible.
- b. It is recommended that health care providers of women **returning from an area where Zika virus is circulating discuss delaying conceiving** a child for at least 2 months. This recommendation is based on the most up-to-date expert opinion based on the expected viral clearance after being infected. Once the virus has cleared, there is no evidence to suggest that previous Zika virus infection will have any effect on subsequent pregnancies.

### 2) Men as travellers

- a. It is recommended that men who have returned from an area where Zika virus is circulating and who have a **pregnant partner** consider abstaining from sexual activity or consistently and correctly use a condom for the duration of the pregnancy. This advice is being offered in an environment of uncertainty about the duration of time in which special barrier precautions should be in place during pregnancy. Guidance will be updated as evidence becomes available. The role of Zika virus testing in this setting remains to be determined; you may wish to consult with a BCCDC Public Health Laboratory Medical Microbiologist for specific circumstances at 1-877-747-2522 or page 604-661-7033 for urgent consults only.
- b. It is recommended that health care providers discuss the possibility of sexual transmission of Zika virus with men who have returned from an area where Zika virus is circulating, and who have a **non-pregnant partner**.
  - *Even if effective non condom-based birth control is being used, Zika virus infection can still be transmitted to a female partner. Interventions to prevent sexual transmission of Zika virus include abstinence or avoiding unprotected sexual activity for at least 6 months. As data accumulate, more precise recommendations may be communicated.*
  - If pregnancy is desired, at minimum, attempts at conception should be delayed for at least 6 months. Abstinence or the use of condoms during sexual activity is recommended for this period of time.



## **Management of returning travellers and those with *possible exposure through sexual contact with a returning traveller***

### **Laboratory Testing** (see Table 1 for Laboratory Testing Guidelines)

Zika viral RNA may be present in a patient's blood for approximately 7 days after symptom onset and has been shown to persist in urine for greater than 10 days. If symptoms have resolved or the patient is asymptomatic, diagnosis is based on the detection of Zika virus-specific antibodies. Interpretation of serologic laboratory test results is challenging as the sensitivity and specificity of Zika virus antibody testing is unknown. Commercial diagnostic tests for Zika antibody are currently being validated at the BCCDC PHL; however, infection with other Flaviviruses such as yellow fever virus (including yellow fever vaccination), dengue, and West Nile virus can generate cross-reacting antibodies. Confirmatory plaque reduction neutralization tests (PRNT) are being performed at NML. Interpretation of results may be done in consultation with the BCCDC PHL medical microbiologist (1-877-747-2522 or page 604-661-7033 for urgent consults only).

### **Zika virus testing is indicated for:**

- 1) All pregnant women returning from a Zika virus affected area.
- 2) Women who have become pregnant within 2 months of travelling to a Zika virus affected area.
- 3) All pregnant women who have had unprotected sexual contact with a man who has travelled to a Zika virus affected area within the past 6 months.
- 4) Pregnant women who have ultrasound findings consistent with congenital infection, which may include, intracranial calcifications, ventriculomegaly, lack of brain maturation and/or microcephaly AND who have a history of possible exposure to Zika virus through travel or unprotected sexual contact with a returning traveller.
- 5) All patients (*male or female*) who become acutely ill (see Table 1 for clinical presentation) within 14 days of return from a Zika virus affected area.
- 6) Patients presenting with Guillain-Barré Syndrome, acute disseminated encephalomyelitis (ADEM), or myelitis who could have been exposed to Zika virus through travel or unprotected sexual contact with a returning traveller.

In consultation with the with a BCCDC PHL medical microbiologist (1-877-747-2522 or page 604-661-7033 for urgent consults only), testing can also be considered for:

- 7) Products of conception in cases of stillbirth/congenital anomaly in women with an appropriate travel or exposure history.

### **Referral pathway for pregnant women being offered Zika virus testing:**

It is recommended that women being evaluated for possible Zika virus infection be offered an obstetrical ultrasound at the time of presentation and again at 19-20 weeks gestational age (see Table 1 for testing details).

Preliminary or confirmed positive test for Zika virus infection or an abnormality on ultrasound consistent with congenital viral infection:

- Refer to the Reproductive Infectious Diseases Clinic at BC Women's Hospital (Tel: 604-875-2424 ext. 5212, Fax 604-875-2871)

Negative or unknown Zika virus serology and a normal detailed or baseline ultrasound:

- Consider offering monthly ultrasounds for reassurance. Assistance with interpreting results and determining follow-up can be obtained from the Reproductive Infectious Diseases Clinic at BC Women's Hospital (Tel: 604-875-2424 ext. 5212, Fax 604-875-2871)

**Table 1. Laboratory Guidance for Zika Virus Testing**

Clinical presentation	<i>Recommended Tests</i>
<b>Pregnant Women</b>	Submit specimens as described below for the Acutely Ill patient, regardless of the presence or absence of symptoms.
<b>Acutely Ill:</b> <ul style="list-style-type: none"> <li>• Patient reports <b>two or more symptoms consistent with Zika virus disease</b> (acute onset of fever, maculopapular rash, arthralgia, or conjunctivitis) with onset during or within 2 weeks of travel <b>AND</b></li> <li>• Is <b>currently symptomatic</b> or had <b>symptom onset</b> within the previous 10 days.</li> </ul>	<ol style="list-style-type: none"> <li>1. 5 ml EDTA purple top blood tube for Zika virus RNA detection</li> <li>2. 5 ml gold top serum separator tube for Zika virus serology</li> </ol> <p><b>Please provide the travel and clinical history (including the date of onset of symptoms), information on pregnancy and indicate that samples are to be forwarded to the BCCDC Public Health Laboratory.</b></p> <p><b>After consultation with the BCCDC microbiologist, <u>urine</u> and <u>nasopharyngeal swabs</u> can be sent for RNA detection (1-877-747-2522 or page 604-661-7033 for urgent consults only).</b></p>
<b>Recovered:</b> <ul style="list-style-type: none"> <li>• Reported symptoms consistent with Zika virus disease with onset during or within 2 weeks of travel</li> <li>• No longer symptomatic, <b>and</b> symptom onset was more than 10 days ago</li> </ul>	<ol style="list-style-type: none"> <li>1. 5 ml gold top serum separator tube for Zika virus serology, collected one month after symptom resolution</li> </ol> <p><b>Please provide the travel and clinical history (including the date of onset of symptoms), information on pregnancy and indicate that samples are to be forwarded to the BCCDC Public Health Laboratory.</b></p>
<b>Asymptomatic:</b> <ul style="list-style-type: none"> <li>• No symptoms consistent with Zika virus disease during or within 2 weeks of travel</li> </ul>	<ol style="list-style-type: none"> <li>1. 5 ml gold top serum separator tube for Zika virus serology, collected one month after return from Zika affected area</li> </ol> <p><b>Please provide the travel and clinical history (including the date of onset of symptoms), information on pregnancy and indicate that samples are to be forwarded to the BCCDC Public Health Laboratory.</b></p>

**Calling the Medical Health Officer**

The medical health officer for your region can be reached at the numbers below. When calling, be explicit that the call is related to Zika virus.

**Fraser Health:** 604-587-3828 (M-F, 8:30-4:30) OR 604-527-4806 (after hours)

**Interior Health:** 1-866-457-5648 (24/7)

**Island Health:**

*South Island* 1-866-665-6626 (M-F, 8:30-5:00)

*Central Island* 1-866-770-7798 (M-F, 8:30-5:00)

*North Island* 1-877-887-8835 (M-F, 8:30-5:00)

*All VIHA HSDAs* 1-800-204-6166 (after hours)

**Northern Health:** 250-565-2000 (24/7)

**Vancouver Coastal Health:** 604-675-3900 (M-F, 8:30-5:00) OR 604-527-4893 (after hours)



## References

- Government of Canada – [Zika Virus website](#)
- Public Health Agency of Canada Travel Notices – [Zika virus infection](#)
- Centers for Disease Control and Prevention – [Zika Virus website](#)
- Oster AM, Brooks JT, Stryker JE, et al. Interim Guidelines for Prevention of Sexual Transmission of Zika Virus — United States, 2016. MMWR Morb Mortal Wkly Rep 2016;65:120–121. DOI: <http://dx.doi.org/10.15585/mmwr.mm6505e1>
- Oster AM, Russell K, Stryker JE, et al. Update: Interim Guidance for Prevention of Sexual Transmission of Zika Virus — United States, 2016. MMWR Morb Mortal Wkly Rep. ePub: 25 March 2016. DOI: <http://dx.doi.org/10.15585/mmwr.mm6512e3er>
- Oduyebo T, Petersen EE, Rasmussen SA, et al. Update: Interim Guidelines for Health Care Providers Caring for Pregnant Women and Women of Reproductive Age with Possible Zika Virus Exposure — United States, 2016. MMWR Morb Mortal Wkly Rep 2016;65:122–127. DOI: <http://dx.doi.org/10.15585/mmwr.mm6505e2>
- Petersen EE, Polen KN, Meaney-Delman D, et al. Update: Interim Guidance for Health Care Providers Caring for Women of Reproductive Age with Possible Zika Virus Exposure — United States, 2016. MMWR Morb Mortal Wkly Rep. ePub: 25 March 2016. DOI: <http://dx.doi.org/10.15585/mmwr.mm6512e2er>
- Interim RCOG/RCM/PHE/HPS clinical guidelines: Zika Virus Infection and Pregnancy - Information for Healthcare Professionals <https://www.rcog.org.uk/globalassets/documents/news/zika-virus-interim-guidelines.pdf>
- [Canadian Recommendations](#) on the Prevention and Treatment of Zika Virus:Update, 5 May 2016.