



Malaria is a common and life-threatening disease present in many tropical and subtropical areas in South America, Southeast Asia, and parts of sub-Saharan Africa.

## WHAT IS... Malaria?

Malaria is an acute, flu-like illness spread through the bite of an infected female Anopheles mosquito. Malaria is caused by one of five types of a parasite (*Plasmodium falciparum*, *Plasmodium vivax*, *Plasmodium ovale*, *Plasmodium malariae*, and *Plasmodium knowlesi*). All of the Plasmodium parasites make people sick by attacking blood cells. Infection with *P. falciparum* is the most serious and can result in death. Infection with *P. vivax* and *P. ovale* is not fatal but can remain dormant in the liver for many months, delaying symptoms, or causing repeat illness.

# MALARIA

## How do you get malaria?

Malaria is caused by a parasite that is passed from person to person through the bite of an infected female Anopheles mosquito. When an Anopheles mosquito bites a person infected with malaria, the parasites develop in the mosquito. When the infected mosquito bites another human, the disease is passed on to that individual.

Most species of this mosquito feed during early evening, through the night and into early morning (dusk-to-dawn biters). This means these are the times for the greatest risk of contracting the disease. The risk of getting malaria is greatest outside cities and at low altitudes, where the Anopheles mosquito is most common.

While rare, the malaria parasite can also be transmitted by transfusion with infected blood, by shared needle use, or from a mother to her unborn child.

## What are the symptoms?

For most people, symptoms of malaria begin one to four weeks after being bitten by an infected mosquito. Symptoms can take a year or more to show up depending on the type of malaria. Also, antimalarial medications may only suppress the disease, rather than prevent it. This means symptoms may surface unexpectedly much later after your trip.

**Fever** is the main symptom of malaria. It can be with or without flu-like symptoms.

*Other symptoms of malaria can include:*

- chills
- headache
- fatigue
- muscle aches
- severe shakes or muscle spasms
- nausea

*Additional symptoms associated with severe (falciparum) malaria:*

- personality change
- confusion
- seizures
- jaundice (yellowing of the skin and eyes)

Severe falciparum malaria may cause coma, kidney failure, and death if not treated within 72 hours from the appearance of a fever. For this reason, *if you have been to an area with malaria and develop a fever seek medical attention immediately.*

If you develop a fever (with or without flu-like symptoms) within a year after your return, be sure to tell your doctor that you have been to an area with malaria. This will help the doctor order the blood tests you need to accurately diagnose the disease.

## How is malaria treated?

Treatment for malaria depends upon the area where a person has been infected. Most drug treatments for malaria typically last for seven days. Even short delays in the diagnosis of malaria can make treatment more difficult and less successful.

## Who is at risk?

Anyone who travels to or lives in an area known to have the malaria parasite can get malaria.

### *Malaria is found in:*

- Areas of Central and South America
- Haiti and the Dominican Republic
- Asia (including the Indian subcontinent, Southeast Asia, and the Middle East)
- Africa
- Eastern Europe
- Oceania

### *Are some people at a higher risk of severe and fatal malaria?*

Young children, pregnant women, or travellers coming from areas with no malaria are more likely to become severely ill and die from malaria. Also, people who are heavily exposed to the bites of mosquitoes infected with *P. falciparum*, common in many countries in Africa south of the Sahara, are most at risk of dying from the disease.

If you were born or grew up in a country with malaria and now live in Canada, you most likely have lost any malaria immunity that you might have developed.

## How can I minimize my risk?

If you are traveling to any of the countries or regions with malaria you need to protect yourself. Take antimalarial medication and avoid mosquito bites.

### *Antimalarial medication*

While no vaccine is available, effective antimalarial medications lower the risk of developing malaria. The best drug for you depends on your travel plans and medical history, so it is important to consult a travel health clinic for an assessment.

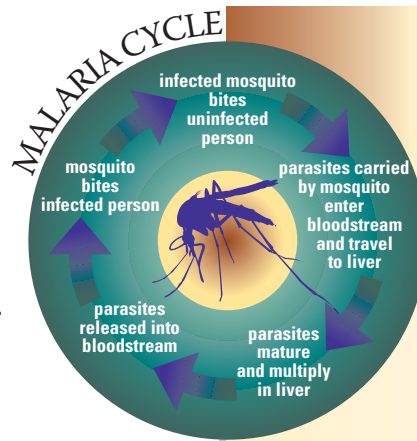
Not all antimalarial medications are safe during pregnancy or for children. Speak to your doctor about which medication is right for you.

It is extremely important to take antimalarial medications exactly as directed. Medication must be taken **before** your trip starts, **during** the entire stay in a risk area, and **after** returning home. You need to keep taking your medication after you return home in order to kill any parasites that may be developing in your liver and blood.

Please note that antimalarial medications do not stop mosquitoes from biting, so it is important to take steps to avoid getting bitten.

### Key References:

- Centers for Disease Control and Prevention. (2006). *Malaria and Travelers*. Retrieved June 25, 2007, from <http://www.cdc.gov/malaria/travel/index.htm>
- Public Health Agency of Canada. (2005). *Malaria: know before you go*. Retrieved June 25, 2007, from [http://www.phac-aspc.gc.ca/tmp-pmv/info/pal\\_mal\\_e.html](http://www.phac-aspc.gc.ca/tmp-pmv/info/pal_mal_e.html)



### *Avoid mosquito bites.*

If you reduce your chance of being bitten by a mosquito, you reduce your chance of getting malaria.

- Wear long-sleeved shirts, long pants (tucked into socks or footwear), and a hat. Light-coloured clothing is best because mosquitoes are generally attracted to dark colours.
- Sleep inside screened areas, under a mosquito net, or in an air-conditioned room.
- Use bed nets that are rectangular, treated with permethrin (an insecticide) every six months and tucked tightly under the mattress before dusk. Treated bed nets are available in Canada and are best to purchase before you leave.
- Treat clothing with 0.5% permethrin to make them repellent to mosquitoes.
- Use insect repellents registered in Canada. Those with 30% DEET (N, N diethyl-m-toluamide) are the most effective.
- Children travelling to areas with malaria are at increased risk. Portable, treated mosquito nets, including self-standing nets, placed over a car seat, a crib, playpen, or stroller provide an insect-protected environment for infants.

### For more information on malaria.

#### **Windsor-Essex County Health Unit**

[www.wechealthunit.org/immunizations/travel-clinic](http://www.wechealthunit.org/immunizations/travel-clinic)  
519-258-2146 ext.1872

or

#### **Public Health Agency of Canada**

[www.phac-aspc.gc.ca/tmp-pmv/info/pal\\_mal\\_e.html](http://www.phac-aspc.gc.ca/tmp-pmv/info/pal_mal_e.html)