

Dengue Fever and Malaria

Although Dengue fever has not spiked in the Dominican Republic since 2007, this mosquito borne disease continues to be endemic to the island. Malaria, also spread by mosquitoes, is the other ever-present health threat about which travelers should know before arriving. The following information provides a description of the risks and symptoms of both diseases and lists general preventative measures against mosquitoes:

DENGUE FEVER

Dengue fever is a viral infection caused by the bite of female *Aedes* mosquitoes.

Risk factors

Dengue occurs more frequently during warm, humid seasons, and transmission is more intense in urban areas, including downtown business areas. Mosquitoes that transmit dengue (*Aedes* mosquitoes) are day biters. Be especially vigilant applying repellent during daytime hours when in areas of high dengue risk. Peak biting times are usually during the early morning hours and again from late afternoon to dusk. The risk is higher for those staying in places with nearby stagnant water reservoirs and no mosquito protection, but transmission can occur in any urban setting.

Symptoms

Victims experience a sudden onset of high fever, headache, generalized weakness, and intense muscle, joint, and low back pain (hence the term, "break bone fever") within 3 to 14 days (on average 4 to 7 days). A subtle rash appears in up to half the people affected, although some have a bright red rash with scattered clear spots. Treatment is purely supportive. Those with persistent high fever should seek medical attention as soon as possible. *Dengue hemorrhagic fever* (DHF) and *dengue shock syndrome* (DSS) are rare but may occur in people who previously have been infected with one strain of dengue virus and are later infected by a different strain (there are 4 strains). DHF and DSS begin like classic dengue but progress to abdominal pain and vomiting.

MALARIA

Malaria is an acute and sometime chronic infectious disease due to the presence of protozoan parasites within the red blood cells. It is transmitted to the human by the bite of the infected *Anopheles* mosquito. The blood of a human infected with malaria infects the mosquito and the cycle continues. Four different species of the causative organism Plasmodium, can cause different degrees of illness.

Risk:

Periodic outbreaks of malaria have occurred in some tourist locations, such as Punta Cana, La Romana or the Haitian border areas. Thus, if traveling in a high-risk area, apply repellent from dusk to dawn. The risk also increases during wet seasons when accumulated water causes mosquitoes to breed.

Symptoms:

Nighttime fevers, chills, body aches, headaches, nausea, and vomiting and/or general malaise can range from mild to severe. Incubation, or the time before symptoms appear varies from 7 to 30 days.

Preventative Treatment:

There are medicinal regimens that may help you avoid Malaria (in addition to taking measures to repel mosquitos), however, there is no one method that can protect completely against the risks of contracting malaria. Chloroquine (taken weekly) is the recommended prophylaxis in the DR. This treatment should be started one week prior to possible exposure. Prophylaxis is recommended for people traveling to remote areas of the country, high outbreak areas and especially along the Haitian border.

General Preventative Measures against Mosquitos

- Wear clothing that exposes as little skin as is practicable. Apply a repellent containing the insecticide DEET (concentration 30 to 35%) or picaridin (concentration 20% or greater for tropical travelers). Picaridin has a pleasant smell, an advantage over DEET.
- The repellent should be applied to all exposed non-sensitive areas of the body. Frequent application ensures continuous protection. The time of day and type of insects to be avoided determine when the repellent should be applied. Mosquitoes that transmit malaria (*Anopheles* mosquitoes) are night biters. Thus, if traveling in a malarious area, be especially vigilant in applying repellent from dusk to dawn. Mosquitoes that transmit dengue (*Aedes* mosquitoes) are day biters, and travelers need to be especially vigilant applying repellent during daytime hours when in areas of dengue risk. Peak biting times are usually during the early morning hours and again from late afternoon to dusk.
- Treat outer clothing with permethrin (or other pyrethroid) when traveling in an area of high risk for malaria or other mosquito-borne or tick-borne diseases. If you are not sleeping in a sealed, air-conditioned room, sleep under a permethrin-impregnated bed net when at risk. Regularly check the net for rips and tears, and keep it tucked in around the bed at all times. Ensure that all open windows have insect screens. Use an aerosol insecticide before going to bed and a vaporizer device throughout the night. Outdoors, a smoldering pyrethroid coil can be used to reduce flying insects. In areas where tick-borne disease is a risk, perform a full body check at least once a day.
- For added protection against mosquitoes, bednets and clothing may be soaked in or sprayed with permethrin. Permethrin is an insecticide licensed for use on clothing; when applied according to directions it can be effective on clothing for several months and on bednets for half a year. Permethrin physically binds to the fabric, which then can be repeatedly washed without loss of effect; this also prevents absorption through skin. In some countries, deltamethrin liquid is available.

- Treat outer clothing with Permethrin (or other Pyrethroid) when traveling in a high-risk area. Ensure that windows have screens or keep the windows closed to reduce insect entry.
- For added protection against mosquitoes, bednets and clothing may be soaked in or sprayed with Permethrin. Permethrin binds to the fabric that can be repeatedly washed without loss of effect. This also prevents absorption through skin. In some countries, Deltamethrin liquid is available. If you are unable to find these products locally, they are available for purchase via the internet.

For further information on dengue fever and malaria, please visit the Centers for Disease Control and Prevention's website at:

<http://www.cdc.gov>