

## Diseases spread by insects and ticks in the American continent (the Americas)

Depending on the destination, travellers may be at risk of a number of different diseases

### Key messages

- **Many different kinds of diseases spread by insects and ticks are reported across the American continent.**
- **Some of these insect-spread infections can occasionally cause severe, life-threatening illness.**
- **Travellers should follow [insect bite avoidance advice](#) and get urgent medical help for any unusual symptoms - especially fever.**
- **Malaria tablets may be recommended for some areas in Central and South America.**
- **Specific advice on malaria and vaccine preventable diseases is available on our [Country Information pages](#).**

### Overview

Regions in the American continent (usually known as the Americas) include the Caribbean, Central, North and South America. Across the Americas, local insects and ticks can spread infections and diseases. Depending on their destination, travellers can be at risk of a number of different diseases.

Insect spread illnesses may be mild and self-limiting. However, certain infections can cause very serious, sometimes life-threatening illness.

### Chikungunya

[Chikungunya](#) is a viral infection caused by the chikungunya virus (CHIKV) and is spread by infected, daytime biting *Aedes* spp. mosquitoes. CHIKV emerged in the Americas in 2013, when the first confirmed locally acquired case was reported in the Caribbean island of Saint Martin. CHIKV quickly spread and continued to cause outbreaks throughout the Americas [1, 2]. As of June 2024, over 300,000 suspected and laboratory-confirmed CHIKV cases have been reported in the Americas in

2024 [2]. Since 2016, Brazil has reported the highest number of CHIKV cases in the Americas and, unlike other countries and territories in the region, Brazil has experienced annual chikungunya outbreaks [1].

Many people infected with CHIKV will have no symptoms. If symptoms do occur, they include a sudden fever, headache and joint pain. Most people will fully recover, but for some individuals, joint pain may last for months or years. Occasional complications have been reported affecting the eyes, nervous system or heart [3]. There is no specific cure for chikungunya infection and treatment aims to relieve the symptoms.

## Dengue

[Dengue](#) fever is caused by the dengue virus (DENV), which like CHIKV is spread by daytime biting *Aedes* spp. mosquitoes. While dengue outbreaks have been reported in the Americas for many years [4], a substantial increase in cases has been reported in the region since 2019 [5]. As of mid-June 2024, the Americas have reported over 9 million dengue cases in 2024. This is twice the number of cases reported for the whole of 2023 [6]. Countries with the highest number of reported cases in the Americas as of June 2024 are Argentina, Brazil, Colombia, Ecuador, Paraguay and Peru [7].

Many infected people do not develop symptoms, but for those who do symptoms include a sudden high fever, severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands or a rash and usually last for two to seven days [8]. Severe dengue (previously known as dengue haemorrhagic fever) is a more serious type of dengue which is rare in travellers. A map showing dengue areas affected worldwide, including in the Americas, is available from the [World Health Organization: Global dengue surveillance](#).

## Leishmaniasis

[Leishmaniasis](#) is an infection caused by a parasite (protozoan *Leishmania*) that spreads to humans by a bite from an infected phlebotomine sandfly. This parasite is found across the Americas [9, 10]. There are different types of this disease, including cutaneous (affecting skin), mucosal (affecting mucus membranes in the nose, mouth and throat) and visceral (affecting the body's internal organs). Cutaneous leishmaniasis is the most common type and causes skin lesions, mainly ulcers, on exposed parts of the body, which often leaves scarring [11].

## Lyme disease

[Lyme disease](#) is a bacterial infection, usually caused by *Borrelia burgdorferi*, which spreads to humans by a bite from an infected *Ixodes* tick. In most cases, a tick must be attached for more than 24 hours before Lyme bacteria can be transmitted. Removing a tick within 24 hours helps reduce the chance of getting Lyme disease. Young ticks (known as nymph ticks) which mostly bite in spring and summer, are more of a risk due to their abundance and small size (less than 2mm). Symptoms include fever, headache, tiredness and a typical rash around the tick bite site called [erythema](#)

[migrans](#).

Lyme disease can be treated successfully with antibiotics, but if untreated, infection can spread to joints, heart and nervous system. In the United States (US) it is most commonly reported in the Northeast, mid-Atlantic and upper-Midwest regions [12]. A map showing Lyme diseases case reports across the US is available from the US Centers for Disease Prevention and Control: [Lyme Disease Case Map](#).

Lyme disease is also reported in Canada [13] and research has shown that the bacteria that causes Lyme disease widespread across the Caribbean, Central and South America, with locally acquired human cases occasionally reported [14, 15, 16].

## Malaria

[Malaria](#) is a preventable, potentially fatal infection caused by a parasite called *Plasmodium*. It spreads to humans via a bite from an infected *Anopheles* spp. mosquito. These mosquitoes usually bite between dawn and dusk (both indoors and outside) and throughout the night.

Malaria symptoms include fever, headache, extreme tiredness and aching muscles. Cough and diarrhoea can also occur. Travellers to risk areas must be made aware that malaria is a medical emergency that needs to be treated very quickly. Infection with a type of malaria parasite called *Plasmodium falciparum* can cause life-threatening complications if prompt treatment is not given.

Malaria is a risk in some parts of Central and South America and a small number of Caribbean islands are also affected. Specific malaria advice for each country is available on our [Country Information pages](#).

## Rickettsial infections

[Rickettsial infections](#) are caused by a range of different bacteria. They are usually spread by fleas, lice, mites and ticks. Some rickettsial infections can cause severe disease such as Rocky Mountain Spotted Fever, scrub typhus and epidemic typhus; prompt medical treatment is essential. Cases of Rocky Mountain Spotted Fever (also known as Brazilian spotted fever) are reported in Canada, Mexico, US and many countries in Central and South America, including Argentina, Brazil, Colombia, Costa Rica, and Panama. Clusters of illness may be reported in families or in geographic areas. Contact with dogs in both rural and urban settings, and outdoor activities like camping, fishing, hiking and hunting increase risk of infection [17].

## South American Trypanosomiasis (Chagas disease)

[Chagas disease](#) is caused by a parasite called *Trypanosoma cruzi* and mostly spreads to humans by contact with faeces or urine from a triatomine bug. Chagas disease is rare in travellers, but is reported in Canada, the US and Latin American countries [18].

Up to 7 million people worldwide are thought to be infected with the parasite that causes Chagas disease, mostly in the Americas. Chagas disease can be cured if treatment is started in the early stages of infection, when symptoms are mild. However, infection may go undetected for many years. Between one to three decades after infection, up to one third of infected people will develop a chronic infection which can affect their heart, digestive and nervous systems [18].

## Tularaemia

[Tularaemia](#) is a bacterial disease, caused by the bacterium *Francisella tularensis*. Humans can be infected with this bacteria in several different ways, including tick and deer fly bites, usually in rural areas. Possible symptoms include sudden fever, chills, headaches, diarrhoea, muscle aches, joint pain, dry cough and progressive weakness. Tularaemia can cause severe disease, including pneumonia, but most infections can be treated with antibiotics. In the US, naturally occurring infections have been reported from all states except Hawaii [19]. Most cases occur in the south-central and western states, and there are about 200 human cases reported each year in the United States [20].

## Viral infections

### **Eastern equine encephalitis (EEE), St Louis encephalitis (SLE), La Crosse encephalitis (LAC)**

Most people infected with the viruses that cause diseases like [EEE](#), [SLE](#) and [LAC](#) do not develop symptoms. However, if the brain is affected (encephalitis) some of these infections can be fatal or cause long-term neurological complications.

The US Centres for Disease Control and Prevention provides more detailed advice about different virus spread by insects and ticks in the USA: [Risk Factors for Vector-Borne Diseases](#).

### **Oropouche (OROV)**

[Oropouche virus \(OROV\)](#) is mainly spread to human by the bite of a midge called *Culicoides paraensis* in the Americas, but OROV can also be spread by the mosquito *Culex quinquefasciatus*. Since the start of 2024, five countries in the Americas have reported cases of OROV: Bolivia, Brazil, Colombia, Peru [21] and Cuba [22].

### **Western equine encephalitis (WEE)**

[Western equine encephalitis \(WEE\)](#) is spread by the bite of an infected mosquito. Historically, the virus has been found in parts of North America, Central America and South America, but no human cases have been reported in the US since the late 1990s [23]. However, in Argentina human WEE cases have been reported in 2023 and 2024 [24] and in 2024, Uruguay reported their first human case of WEE [25].

## West Nile virus (WNV)

[West Nile virus \(WNV\)](#) is a viral illness of humans, horses and birds spread by *Culex* spp. mosquitoes. Most people infected with WNV (approximately 80 percent) do not develop symptoms. Those with symptoms can experience a mild, self-limiting flu-like illness with fever, headache, muscle pain and rash. About one in every 150 cases progresses to a more serious neurological illness.

WNV is regularly reported in North America. Maps showing [WNV activity in the USA](#) are available from the US Centres for Disease Control and Prevention. Information about [WNV activity in Canada](#) is available from the Public Health Agency of Canada.

WNV is less commonly reported in Central or South America and the Caribbean, but some countries have reported WNV activity in birds or horses [26]. In December 2014, the first human WNV case was reported in Brazil. Since then, a total of 13 WNV cases have been confirmed in two states of Brazil; Piauí and Tocantins, with the last case reported in 2023 [27].

## Yellow fever

[Yellow fever](#) is a vaccine preventable viral infection which is spread via the bite from an infected *Aedes* spp., *Haemogogus* spp. or *Sabethes* spp. mosquito. Many infected people do not develop symptoms, but for those who do, first symptoms include a high temperature, headache, loss of appetite, muscle pain nausea and vomiting. Most people make a full recovery after 3 to 4 days; however, approximately 15% progress to severe disease and go on to develop jaundice (yellow skin and/or eyes), abdominal pain, kidney failure and internal bleeding). Approximately half of those with severe disease will die within seven to-10 days [28].

As of the end of 2023, 13 countries in Central and South America are endemic or have regions within the country which are endemic for yellow fever. Country-specific advice, including yellow fever vaccine recommendation maps, are available on our [Country Information pages](#).

## Zika virus (ZIKV)

[ZIKV](#) infection is a mosquito spread infection that emerged from Africa [29]. Like DENV and CHIKV, it is spread by *Aedes* spp. mosquitoes. ZIKV is now established in a [number of countries in the Americas](#). ZIKV infection symptoms include fever, headache, a rash (that often starts on the face and then spreads across the body), conjunctivitis (sore, red eyes) and pain in the small joints of the hands and feet. The illness is usually mild and short lived [30].

There is now scientific agreement that ZIKV infection in pregnancy can cause a birth defect called microcephaly (when a baby is born with a smaller than normal head) and other congenital anomalies (birth defects) and Guillain-Barré syndrome [31-33].

Country-specific ZIKV advice, including recommendation for pregnant travellers and those planning

pregnancy, are available on our [Country Information pages](#).

## Advice for travellers

Reduce your risk of insect or tick-borne diseases by using [insect bite avoidance](#) measures.

- *Aedes* spp. mosquitoes usually bite during daylight hours.
- *Anopheles* spp. mosquitoes usually bite during the evening and night. Malaria prevention tablets are recommended for some countries; see our [Country Information pages](#) for further details.
- Sand flies bite at dusk and after dark but will bite during the day if disturbed.
- Ticks do not jump or fly but opportunistically attach themselves to passing humans. They then crawl to a suitable feeding place, often the nape of the neck, groin or armpit. [Remove ticks carefully](#) or get medical help.
- Triatomine bugs are large bloodsucking insects found in rural and suburban areas. Some bugs have adapted to living in and near houses. They rest during the day in dark crevices, particularly in unplastered cracked walls of mud/mud-brick houses, chicken coops, palm-thatched roofs or cracks in floors. They feed at night; infected bugs can deposit parasites with their faeces on human skin shortly after feeding. Scratching or rubbing helps the parasites to enter the body via the bite mark or broken skin [15]. An insecticide impregnated mosquito net helps protect travellers staying in basic accommodation.
- An effective vaccine protects against [yellow fever](#) is available if you are visiting risk areas, it is not [suitable for all travellers](#). A number of countries in the America are affected, see our [Country Information pages](#) for destination-specific advice.

## Advice for health professionals - the returned traveller

Health professionals must be alert to the possibility of insect or tick-borne disease when consulting with an ill-returned traveller who has visited the Americas. Health professionals who suspect a case of insect or tick-borne infection in a traveller should liaise with their local infectious disease physician, microbiologist or virologist.

The UK Health Security Agency [Imported Fever Service](#) is available to local infectious disease doctors or microbiologists if specialist advice is needed: 0844 778 8990 (24 hours; seven days a week).

## Resources

- [Insect and tick bite avoidance](#)
- [UK Health Security Agency: Chikungunya](#)
- [UK Health Security Agency: Dengue](#)
- [UK Health Security Agency: Malaria](#)
- [UK Health Security Agency: Lyme disease](#)

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