

YELLOW FEVER

Most travelers have heard about yellow fever – not because they know what it is but simply because they have had to have a vaccination against yellow fever in order to travel to certain destinations. The yellow fever vaccination remains the only compulsory international travel vaccination for travelers to and from many tropical countries, although other vaccinations are recommended frequently.

What is yellow fever?

Yellow fever is an infectious disease caused by a virus, specifically an arbovirus, that is, a virus transmitted by arthropods such as insects. Yellow fever is transmitted to man by mosquitoes. Other arboviruses are also transmitted by mosquitoes, such as Dengue, various encephalitis viruses and the West Nile virus, but probably none have caused as many deaths as the yellow fever virus.

Where does yellow fever occur?

The disease is only found in tropical areas of Africa and South America, where sporadic outbreaks still occur, especially in east and West Africa. Thousands of deaths from yellow fever occurred in Sudan and Ethiopia in the 20th century. In Kenya, the disease is mainly confined to the Rift Valley, north of Lake Baringo, but extensive vaccination programmes have kept the disease under control for the past few years.

How is it transmitted?

The yellow fever virus is primarily a monkey infection. Forest dwelling mosquitoes pass the virus from monkey to monkey in the forests of tropical Africa and South America. Only certain species of monkey are infected and likewise only certain types of mosquitoes are vectors. The infected monkeys occasionally die but often do not seem to be affected by the virus. Humans living and farming in forest clearings or near the edges of forests are exposed to mosquitoes which can bite either monkeys or humans. If an infective mosquito bites a human then the virus is transmitted into the bloodstream. This is known as jungle yellow fever or the rural cycle of transmission. Once the disease has been transmitted to a human, man-biting *Aedes aegypti* mosquitoes, which are common in villages and towns, can maintain transmission from human to human via their bites in an urban cycle. *Aedes aegypti*, characterized by its black and white markings, is a familiar day-biting mosquito to most residents and travelers in the tropics.

What are the symptoms?

At the onset there is high fever with headache and muscle pains. There is likely to be nausea and vomiting with body pains, dehydration with a dry tongue and jaundice. All body organs are invaded and destroyed by the virus. Damage to the liver produces the jaundice that makes the patient yellow. As the virus invades organs, abdominal pain increases and the patient may vomit “black vomit” containing blood and may collapse

from severe fatigue. Bleeding may occur in the skin and from various openings (eyes, nose, mouth, bladder etc.) and even the skin becomes jaundiced. Death can take place as early as the third day as a result of multiple organ failure. There is no specific drug to treat yellow fever and about 60% of patients who become infected will die.

Prevention of yellow fever

The yellow fever vaccination is extremely effective and protects against the disease for ten years, beginning ten days after the inoculation – hence the requirement to be vaccinated at least ten days before travel. Since the actual areas where the yellow fever virus are found usually extend beyond epidemic zones, the vaccine is highly recommended for travelers visiting rural areas in countries where the virus is known to occur. Proof of vaccination is required by many countries on entry and is provided with a valid International Certificate of Vaccination.

Advice to travelers

Yellow fever is a severe viral disease which usually causes death. Any traveler to a country which falls within the yellow fever zone should have the vaccination. Moreover, many countries insist on a certificate of vaccination from travelers who are arriving from yellow fever regions. If you are unsure about your vaccination requirements, visit a vaccination centre near you and ask for advice. Even though the disease appears to be rare, it is wise to take it seriously. Do not acquire the vaccination certificate without receiving the vaccine because your own life could actually be in danger.