

# Dengue Virus in Sudan



**Rihab Muhammad Dafalla\***

*Department of Microbiology Faculty of Science, University of Gezira, Wad Madani, Sudan*

**Submission:** December 08, 2022; **Published:** December 16, 2022

**\*Corresponding author:** Rihab Muhammad Dafalla, Department of Microbiology Faculty of Science, University of Gezira, Wad Madani, Sudan

## Abstract

Due to the heavy rain in the west of Sudan, the Aedes mosquitoes found suitable conditions for propagation or reproduction, the mosquitoes are infected by the flavivirus that causes dengue fever, which you can get from the bite of a mosquito carrying one of different four serotypes of dengue virus. Dengue fever is a global human threat, which causes big problems in health, education, and the economy these days in tropical and sub-tropical areas in the world.

**Keywords:** Dengue Fever; Flavivirus; Aedes Mosquitoes; Flooding; West Sudan

## Introduction

Dengue Fever (DF) is an acute viral disease, dengue fever is mosquitoes transmitted virus spread globally in rainy places, which is a suitable condition for Aedes (*Ae. aegypti* or *Ae. albopictus*) mosquitoes to spread in the world [1]. Dengue outbreaks are circulating in many countries of the world, including Africa, the Middle East, Asia, Europe, the Americas, and the Pacific Islands [1]. The World Health Organization (WHO) estimates dengue as a major global public health challenge in the tropic and subtropic nations. Dengue virus infection presents with diverse clinical features that range from asymptomatic illness to severe illness of dengue (hemorrhagic fever/dengue shock syndrome) [2]. Anyone who lives in or travels to an endemic area with Dengue fever is at risk for infection [3]. Transmission among human beings occurs by the mosquito Aedes and chiefly occurs during the rainy season [4]. DF is a severe infection that involves individuals of all age groups (infants, children, adolescents, and adults) [5] DF is also known as breakbone fever because of the associated myalgia and pain in joints [6]. The Ministry of Health in Sudan registers current further outbreaks of dengue disease and 'acute hysteria. Dengue (Vector-borne) fever is increasing in Sudan after recent floods. Flooding is thought to be the main source of the rising in dengue. Floods caused by high temperatures and a shortage of preventive care are leading to the spread of the disease in a country tortured with political and economic reflection. The heavy rains and a shortage of "preventive care" measures such as insect repellants and bed nets. "For economic reasons the country has lost many fundamental jobs in terms of preventive medicines. We no longer have the staff that used to work in observational health or workers

who used to prepare things before a problem could happen. The Ministry of Health in Sudan reported that on twenty-three November this year about 3,326 cases of dengue fever outbreak through Sudan, 9 cases of acute hysteria among students, and 23 patients died from the fever according to the report.

The WHO says dengue cases have increased eightfold over the past 20 years.

## History of the disease

The first reported case of dengue-like illness was in India in Madras in 1780 (7). Dengue has emerged as a worldwide problem since the 1960s, the first virologically evidenced epidemic of dengue disease occurred in India on the Eastern Coast of India and Calcutta in 1963-1964 [8].

## Causative agent

The causative agent is the species single-stranded RNA positive sense an envelope flavivirus, which belongs to the family Flaviviridae, it has four different serotypes (DEN-1, DEN-2, DEN-3, and DEN-4) [1,2].

## Clinical Manifestations

The people who get sick with dengue, their symptoms can be mild or severe [2,6]. People with mild symptoms can be confused with other diseases that cause fever, aches, pains, or cutaneous rash. About one in four persons infected with dengue fever will get sick. Severe dengue disease (hemorrhagic fever and shock) can be life-threatening within a few hours and often requires

an intensive care unit at a hospital [2,6]. DHF is extremely seen during secondary dengue fever. However, in babies, it may also occur during initial infection due to maternally achieved dengue antibodies [5]. The shock persists for a short period and the patient promptly recovers with supportive therapy.[7]

### Symptoms

Moderate dengue fever symptoms can be mixed with other diseases that cause a fever, aches, pains, or a cutaneous rash.

The main common mark of dengue is a **fever** lasting 3 to 1 week [7,8]

Following:

- i. Vomiting, Nausea (at least 3 times in 24 hours).
- ii. Pains and Aches (eye pain, typically behind the eyes, muscle, joint, or bone pain).
- iii. Bleeding (nose, gums, bruising).
- iv. Cutaneous Rash [9].

Symptoms of dengue fever typically last 3–10 days. Most patients will recover after about ten days [1,2,7].

### Control of the Disease

#### Treatment

No therapy treats dengue fever. Your healthcare supplier will give you recommendations on how to deal with your symptoms and when you should go to the ER [7,8].

Managing your symptoms is the only way to treat dengue fever [10]. Follow your healthcare provider instructions, which may include: Drinking plenty of water and fluids, to keep yourself hydrated by.

Treating pain with paracetamol.

Enough rest on the bed all day no movement

Do not take ibuprofen or aspirin, due to the increase in your risk of life-threatening internal bleeding.

### Prevention

The two main ways to keep yourself away from dengue by avoiding mosquito bites and vaccination [10].

#### Mosquito protection

The right way to reduce your risk of dengue fever is to protect yourself from mosquito bites.

Use EPA-licensed insect repellents that contain 20% to 30% DEET or other ingredients known to help keep Aedes mosquitos away.

Keeping your body covers outdoors, especially at night when mosquitos are more likely to be around.

Remove back or standing water

Keep mosquitos away from your housing by keeping windows and doors closed.

Use mosquito netting at night.

### Vaccination

The dengue virus vaccine Dengvaxia™ is licensed only if you have had dengue fever before. It can reduce your risk of severe dengue (dengue hemorrhagic fever and shock) if you get different serotypes of the dengue virus in the future [10]. Using the vaccine is not licensed if you have never had dengue fever before. Because if you infected once with dengue virus you should get sicker by another strain of the virus, being vaccinated before having dengue fever for the first time can increase your risk of severe dengue. Your healthcare provider will do a blood test to check for antibodies of a previous dengue infection to confirm that you have already had dengue before taking the vaccine. Vaccination is not available to everyone. Check with your healthcare provider to understand whether you are qualified for dengue vaccination.

### References

1. Halstead SB (1988) Pathogenesis of dengue: Challenges to molecular biology. *Science* 239(4839): 476-481.
2. Kurane I (2007) Dengue hemorrhagic fever with special emphasis on immunopathogenesis. *Comp Immunol Microbiol Infect Dis* 30(5-6):329-340.
3. Chen LH, Wilson ME (2010) Dengue and chikungunya infections in travelers. *Curr Opin Infect Dis* 23(5): 438-444.
4. San Martin JL, Brathwaite O, Zambrano B, Solorzano JO, Bouckennooghe A, et al. (2010) The epidemiology of dengue in the Americas over the last three decades: A worrisome reality. *Am J Trop Med Hyg* 82(1): 128-135.
5. Halstead SB, Lan NT, Myint TT, Shwe TN, Nisalak A, et al. (2002) Dengue hemorrhagic fever in infants: Research opportunities ignored. *Emerg Infect Dis* 8(12): 1474-1489.
6. Arshad I, Malik FA, Hussain A, Shah SA (2011) Dengue fever: Clinic pathologic correlations and their association with poor outcome. *Professional Med J* 18: 57-63.
7. Gupta N, Srivastava S, Jain A, Chaturvedi UC (2012) Dengue in India. *Indian J Med Res* 136: 373-390.
8. Narayanan M, Aravind MA, Thilothammal N, Prema R, Sargunam CS, et al. (2002) Dengue fever epidemic in Chennai-a study of clinical profile and outcome. *Indian Pediatr* 39(11): 1027-1033.
9. Thomas EA, John M, Bhatia A (2007) Muco-Cutaneous manifestations of dengue viral infection in Punjab. *Int J Dermatol* 46(7): 715-19.
10. Geneva, Switzerland: World Health Organization (2009) WHO Dengue: Guidelines for Diagnosis, Treatment, Prevention, and Control. Part 1.1.6: Dengue case classification; p. 10-12.



This work is licensed under Creative Commons Attribution 4.0 License  
DOI: [10.19080/JOJPH.2022.07.555708](https://doi.org/10.19080/JOJPH.2022.07.555708)

**Your next submission with Juniper Publishers  
will reach you the below assets**

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats  
**( Pdf, E-pub, Full Text, Audio)**
- Unceasing customer service

**Track the below URL for one-step submission**  
<https://juniperpublishers.com/online-submission.php>