

### What is Dengue Fever?

Dengue fever is a serious form of mosquito-borne disease caused one of four closely related viruses called *Flaviviruses*. They are named DENV 1, DENV 2, DENV 3, or DENV 4.

The disease is found in most tropical and subtropical areas (including some islands in the Caribbean, Mexico, most countries of South and Central America, the Pacific, Asia, parts of tropical Africa and Australia). Almost all cases reported in the continental United States are in travelers who have recently returned from countries where the disease circulates. Dengue is endemic to the U.S. territories of Puerto Rico, the Virgin Islands, and Guam and in recent years non-travel related cases have been found in Texas, Florida, and Hawaii.

### Who is at risk for Dengue Fever?

Dengue fever may occur in people of all ages who are exposed to infected mosquitoes. The disease occurs in areas where the mosquitos that carry dengue circulate, usually during the rainy seasons when mosquito populations are at high numbers.

### What are the symptoms of Dengue Fever?

Dengue fever is characterized by the rapid development of fever that may last from two to seven days, intense headache, joint and muscle pain and a rash. The rash develops on the feet or legs three to four days after the beginning of the fever.

Some people with dengue develop dengue hemorrhagic fever (DHF). Symptoms of DHF are characteristic of internal bleeding and include: severe abdominal pain, red patches on skin, bleeding from nose or gums, black stools, vomiting blood, drowsiness, cold and clammy skin and difficulty breathing. Shock and circulatory failure may occur. Dengue hemorrhagic fever is a medical emergency. The death rate for untreated DHF can be as high as 10%–15% in places where emergency supportive treatment with intravenous fluids and platelet replacement is not readily accessible.

### How soon do symptoms appear?

Dengue fever may occur from three to 14 days after being bitten by an infected mosquito.

### How is Dengue Fever spread?

Dengue fever is spread by the bite of infected *Aedes* mosquitoes. It cannot be spread from one person to another. However, infected people can spread the disease to other mosquitos that bite them.

### When and for how long is a person able to spread the disease?

Dengue Fever is not spread from person to person.

## How is a person diagnosed?

Diagnosis is based on laboratory testing through a health care provider.

## What is the treatment?

There is no specific treatment available. Health care providers may offer supportive therapy (i.e., rest, fluids), and oxygen therapy is often used for patients who experience shock during their illness. People with dengue should avoid medications containing aspirin, ibuprofen, and naproxen for pain.

## Does past infection make a person immune?

There are four strains of dengue virus (DENV 1, DENV 2, DENV 3, or DENV 4). If you become infected with one of the strains, you will develop immunity to that specific strain of dengue virus; however, it will not protect you from becoming infected with any of the other strains of dengue virus.

## Should children or others be excluded from day care, school, work or other activities if they have Dengue Fever?

No, infants, toddlers and school-aged children should not be excluded unless the staff determines the child is unwilling or unable to participate in activities or the staff determines that they cannot care for the child without compromising their ability to care for the health and safety of the other children in the group.

All others can attend work and other functions as long as they are well enough to do so.

## What can be done to prevent the spread of Dengue Fever?

Mosquito control is the most important way to prevent the spread of dengue. The most effective way to control mosquitos is to eliminate places where they lay their eggs, such as artificial containers that hold standing water around the home. Use of mosquito netting and repellents are helpful in minimizing an individual's exposure.

### Additional Information:

Is available at [www.ndhealth.gov](http://www.ndhealth.gov) or by calling the North Dakota Department of Health at 800.472.2180.

**This disease is a reportable condition. As mandated by North Dakota law, any incidence of this disease shall be reported to the North Dakota Department of Health.**

### Resources:

1. *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30<sup>th</sup> ed. [Children in Out-Of-Home Care]. Kimberlin, DW; Brady, MT; Jackson, MA; Long, SS. American Academy of Pediatrics. 2015: 132-151.
2. *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30<sup>th</sup> ed. [Dengue]. Kimberlin, DW; Brady, MT; Jackson, MA; Long, SS. American Academy of Pediatrics. 2015: 322-325.
3. Heymann, D. L. (2015). *Control of Communicable Diseases Manual, 20<sup>th</sup> Edition*. Dengue. American Public Health Association. 2015: 144-150.
4. Centers for Disease Control and Prevention, 2015: <http://www.cdc.gov/dengue/>
5. David P.L. Chan, et. al. (2006). Ophthalmic Complications of Dengue. *Emerging Infectious Diseases*, 12(2), p 285-289; [www.cdc.gov/eid](http://www.cdc.gov/eid)