

Dengue Fever Factsheet



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There are many risks for employees who work outdoors. Farmers, foresters, landscapers, groundskeepers, painters, roofers, pavers, construction workers, and other outdoor workers are exposed to sun, heat, cold, and insects, especially mosquitoes. This exposure means they run the risk of contracting diseases transmitted by mosquitoes like West Nile Virus and Dengue Fever.

Q. What is dengue?

A. Dengue (pronounced den'gee) is a disease caused by any one of four closely related viruses (DEN-1, DEN-2, DEN-3, or DEN-4). The viruses are transmitted to humans by the bite of an infected mosquito. In the Western Hemisphere, the Aedes aegypti mosquito is the primary transmitter or vector of dengue viruses. It is estimated that there are over 100 million cases of dengue worldwide each year.

Q. What is dengue hemorrhagic fever (DHF)?

A. DHF is a more severe form of dengue. It can be fatal if unrecognized and not properly treated. DHF is caused by infection with the same viruses that cause dengue. With good medical management, mortality due to DHF can be less than 1 percent.

Q. How are dengue and dengue hemorrhagic fever (DHF) spread?

A. Dengue is transmitted to people by the bite of an Aedes mosquito that is infected with a dengue virus. The mosquito becomes infected with dengue virus when it bites a person who has dengue or DHF and after about a week can transmit the virus while biting a healthy person. Dengue cannot be spread directly from person to person.

Q. What are the symptoms of the disease?

A. The principal symptoms of dengue are high fever, severe headache, backache, joint pains, nausea and vomiting, eye pain, and rash. Generally, younger children have a milder illness than older children and adults.

Dengue hemorrhagic fever is characterized by a fever that lasts from 2 to 7 days, with general signs and symptoms that could occur with many other illnesses (e.g., nausea, vomiting, abdominal pain, and headache). This stage is followed by hemorrhagic manifestations, tendency to bruise easily or other types of skin hemorrhages, bleeding nose or gums, and possibly



The stylets (needle-like structures) and proboscis (elongated mouth) of an Aedes aegypti feeding. Dengue viruses are transmitted during the feeding process.

internal bleeding. The smallest blood vessels (capillaries) become excessively permeable ("leaky"), allowing the fluid component to escape from the blood vessels. This may lead to failure of the circulatory system and shock, followed by death, if circulatory failure is not corrected.

Q. What is the treatment for dengue?

A. There is no specific medication for treatment of a dengue infection. Persons who think they have dengue should consult a physician. They should also rest, drink plenty of fluids, and use pain relievers with acetaminophen and avoid those containing aspirin.

Q. Is there an effective treatment for dengue hemorrhagic fever (DHF)?

A. As with dengue, there is no specific medication for DHF. It can however be effectively treated by fluid replacement therapy if an early clinical diagnosis is made. Hospitalization is frequently required in order to adequately manage DHF.

Q. Where can outbreaks of dengue occur?

A. Outbreaks of dengue occur primarily in areas where Aedes aegypti (sometimes also Aedes albopictus) mosquitoes live. This includes most tropical urban areas of the world. Dengue viruses may be introduced into areas by travelers who become infected while visiting the tropics where dengue commonly exists.

In the America region, all dengue virus serotypes are now present. DEN-3 was reintroduced into Central America in 1994 and is now found in several countries in the region. Since this serotype has been absent from the Americas for almost 20 years, the population has a low level of immunity and the virus is expected to spread rapidly.

Q. Which working environments may increase exposure to mosquitoes?

A. Mosquitoes may breed in any puddle or water that stands for more than 4 days. Workers at sites near stagnant pools, ponds, watering troughs, irrigation

ditches, rain barrels, manure lagoons, or any stagnant body of water may be at increased risk of mosquito exposure. Equipment such as tarps, buckets, barrels, and wheelbarrows may allow mosquito larvae to develop if water accumulates in them. Even water-filled ruts on the ground attract mosquitoes.

Many mosquitoes bite people most actively at dusk and dawn. When possible, avoid working outdoors when mosquitoes are biting. Some mosquitoes are active during the day—particularly in weedy, bushy, and wooded or shaded areas. When possible, avoid working in these areas.

Q. What can employees who work outdoors do to reduce the risk of acquiring dengue?

A. There is no vaccine for preventing dengue. Outdoor workers can decrease their risk of dengue by reducing their contact with mosquitoes through the use of personal protective measures where mosquitoes may be actively biting.

- Wear long-sleeved shirts, long pants, and socks when possible.
- Spray exposed skin with insect repellents containing DEET at concentrations of 35 percent or less.
- Read and follow label directions for repellent use.
- Do not apply repellents to cuts, wounds, or irritated skin.
- Spray protective clothing with repellents containing DEET.
- Do not apply repellents under clothing.

Q. How can employers protect employees who work outdoors against dengue?

A. Employers can help protect outdoor workers by implementing environmental control measures:

- When possible, schedule work to avoid having

workers outdoors when mosquitoes are most active.

- Eliminate as many sources of standing water as possible to eliminate mosquito-breeding areas by:
 - preventing stagnant water in animal drinking troughs, ponds, and other standing bodies of water by changing the water every few days or aerating it;
 - turning over, covering, or removing equipment such as traps, buckets, barrels, and wheelbarrows that accumulate water;
 - discarding tires, buckets, cans, and containers in the work area; place drain holes in containers that cannot be discarded;
 - cleaning out rain gutters and ditches to get rid of standing water and fill ruts and other areas that accumulate water.

Q. How can epidemics of dengue hemorrhagic fever (DHF) be prevented?

A. The emphasis for dengue prevention is on sustainable, community-based, integrated mosquito control, with limited reliance on insecticides (chemical larvicides and adulticides). Preventing epidemic disease requires a coordinated community effort to increase awareness about dengue/DHF, how to recognize it, and how to control the mosquito that transmits it.

Texas Department of Insurance, Division of Workers' Compensation has other publications related to this subject available at www.tdi.state.tx.us/wc/services/employers.html:

- Insect Bites and Stings Fact Sheet
- West Nile Virus Fact Sheet
- West Nile Virus Mosquito Control Fact Sheet

