

# Insect Bites and Stings

Insects, including mosquitoes, lice, ticks, fleas, bees, wasps, and bedbugs, live all over the world. They can be found in cities and rural areas; outdoors or inside any type of home, dwelling, or shelter; and in both developed countries and the developing world.

Because insects live everywhere, insect bites and stings are very common. Insect bites and stings can be very painful, can cause blisters or **necrosis** (tissue death), and can cause allergic reactions.

Insects carry diseases on their bodies, in their blood, in their saliva, or in their venom. When an insect bites an animal or a human, those diseases can be **transmitted** (passed on from the insect). Sometimes the organisms that cause a disease (bacteria, viruses, or parasites) stay in the animal or human without causing that disease. That type of infected animal or human is called a **host**. Usually, insect bites infect a person or an animal and produce the symptoms of a disease. Insect bites are responsible for causing many types of diseases and therefore lead to illness and death for millions of people worldwide.

## Some Important Insect-Borne Diseases

Malaria	Chagas disease
West Nile virus	Plague
Yellow fever	Viral encephalitis
Dengue fever	River blindness (onchocerciasis)
Lyme disease	Leishmaniasis
Rocky Mountain spotted fever	

## First Aid for Insect Bites and Stings

- If a person receives a large number of bee stings, if the stings are in the mouth or throat, or if a person experiences shortness of breath or throat swelling after an insect bite or sting, call 911 in the United States or Canada for emergency assistance.
- Quickly remove any part of a bee stinger left in the skin.
- Cleanse the area with soap and water.
- Use caution removing ticks from under the skin so that no part of the tick body is left there.
- Apply ice to the area to relieve pain.
- Over-the-counter pain relievers such as acetaminophen or ibuprofen can be used.
- For guidance in the United States, you can reach a poison center by calling (800) 222-1222.

## Preventing insect bites



<sup>a</sup>If skin is exposed use DEET insect repellent and wash off after use.

## FOR MORE INFORMATION

- World Health Organization  
[www.who.int](http://www.who.int)
- American College of Emergency Physicians  
[www.emergencycareforyou.org](http://www.emergencycareforyou.org)

**+** To find this and previous JAMA Patient Pages, go to the Patient Page index on JAMA's website at [www.jama.com](http://www.jama.com). Many are available in English and Spanish. A Patient Page on bedbugs was published in the April 1, 2009, issue; one on West Nile virus in the July 23/30, 2003, issue; one on Lyme disease in the June 20, 2007, issue; and one on malaria in the November 10, 2010, issue.

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**Sources:** World Health Organization, American College of Emergency Physicians, National Institutes of Health, Centers for Disease Control and Prevention

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