

Q&A: Malaria in the U.S. and what we need to know

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The Centers for Disease Control and Prevention has issued a health advisory following the recent cases of malaria in Florida and Texas.

So how worried should we be about malaria?

The disease accounts for more than half a million deaths each year outside of the United States. "Malaria is a potentially fatal disease that should be taken seriously everywhere," says Shauna Gunaratne, MD, MPH, an expert in both tropical and travel medicine who has treated people with malaria at Columbia University Irving Medical Center.

Around 2,000 cases of malaria are diagnosed annually in the United States, though the vast majority of infections are acquired while traveling abroad. Mosquitoes can spread malaria when they bite someone who is infected, then carry the parasite to the next person they bite.

All of the recent cases were acquired in the United States, suggesting that [mosquitoes](#) are spreading Plasmodium, the parasite that causes malaria, right here.

"Most Americans have not encountered this parasite and do not know that it can kill you in the absence of treatment," says microbiologist David Fidock, Ph.D., who has worked for over 30 years on developing treatments for malaria. "Given the global nature of infectious diseases and [climate change](#), malaria is something everyone should be aware of."

We asked Fidock and Gunaratne to provide more information about malaria and how it's treated.

What is malaria?

Malaria is a serious, often [deadly disease](#) caused by the Plasmodium parasite, which infects mosquitoes and humans.

Malaria causes flu-like symptoms, including high fevers, intense chills, headaches, muscle aches, fatigue, nausea, and vomiting. Without prompt

treatment, the infection can become severe and cause serious complications, including difficulty breathing, mental confusion, seizures, jaundice, kidney failure, coma, and death. Children, the elderly, pregnant women, and individuals who are immunocompromised are at greatest risk for complications.

Symptoms usually start two to four weeks after being bitten by a mosquito carrying the Plasmodium parasite. The Plasmodium species (vivax) that spread recently in Texas and Florida can hide in the liver and cause waves of recurrent disease spaced months apart.

How is malaria acquired?

Malaria infection occurs when you are bitten by a mosquito that harbors infectious Plasmodium parasites. The disease cannot be transmitted from person to person. Malaria is typically acquired during travel to areas where malaria is endemic.

Do all mosquitoes carry malaria parasites?

The mosquito that transmits malaria, known as Anopheles, is different from the mosquitoes that transmit dengue or yellow fever and West Nile virus. Only female Anopheles mosquitoes can transmit malaria to people.

Fidock recommends taking pictures of mosquitoes in the area where you have been bitten, which can help health care professionals quickly determine whether you may have encountered an Anopheles mosquito capable of transmitting malaria parasites.

Who is at risk for malaria?

Anyone who travels to an area where malaria is endemic may be at risk.

People who reside long-term in areas where malaria is endemic have some protection against severe disease. People who leave a malaria-endemic area for at least six months and then return may think their risk is low, but any prior immunity they may have had is lost. Malaria is present mostly in Africa but also occurs in South America, Southeast Asia, the Indian sub-continent, and the Western Pacific.

Why is malaria popping up in the United States now?

Malaria was once common in the United States, but large-scale efforts to reduce mosquito populations, starting over 70 years ago, have largely eliminated the disease in this country.

The risk of malaria infection in the United States remains low, but there's been an uptick in imported cases in the past year and a half as people have begun to travel extensively.

A warming world has favorable effects on the mosquito population, allowing mosquito larvae to mature faster and causing mosquitoes to bite and feed on humans more frequently. Warmer temperatures have also shortened the incubation period of some mosquito-borne diseases, such as dengue and malaria, causing them to be infective more rapidly. Increased precipitation in some areas of the world and the United States will expand vegetation and breeding sites for mosquitoes.

Given warming temperatures and wetter climates leading to increased mosquito populations and disease transmission, we may start to see dengue, Chikungunya, and malaria emerge in places they were previously not found.

How is malaria prevented?

The best way to prevent malaria is to avoid being bitten by mosquitoes.

For people who are visiting malaria-endemic areas, several safe and effective medications can be taken to prevent malaria.

"It is important to take these medications as prescribed," says Gunaratne. "People who are planning to travel to malaria-endemic areas should consult with a primary care physician or a travel medicine provider to obtain a prescription and additional guidance on preventing malaria and other infectious diseases."

The WHO approved a malaria vaccine in 2021, but it is only partially effective and must be combined with other disease-prevention strategies. "There's also far more demand than there is supply, so the vaccine is an imperfect tool," Fidock says.

How is malaria treated?

Several anti-malarial drugs target different species of the malaria parasite. Some medications are taken orally; others are given via intravenous infusion, particularly in severe cases.

"We're actively trying to discover and develop new drugs to treat malaria, as the parasites are continuously evolving in ways that make them resistant to current treatments," says Fidock.

What do I do if I suspect I have malaria?

"Malaria is absolutely a medical emergency," Gunaratne says.

Contact a health care provider if you exhibit malaria symptoms and have recently traveled to an area where malaria is endemic so you can get tested for the disease.

"A malaria infection can be rapidly lethal, killing up to one-quarter of people who have no immunity to this disease and are not treated," Fidock says. "If you've visited an area where malaria is common and you develop symptoms, you can go from feeling mildly ill to falling into a coma within several days."

"The best way to fight malaria is to not get it in the first place," Gunaratne says. "Speak to your health care provider before traveling and take [malaria](#) prophylaxis if advised to do so."

Provided by Columbia University Irving Medical Center

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