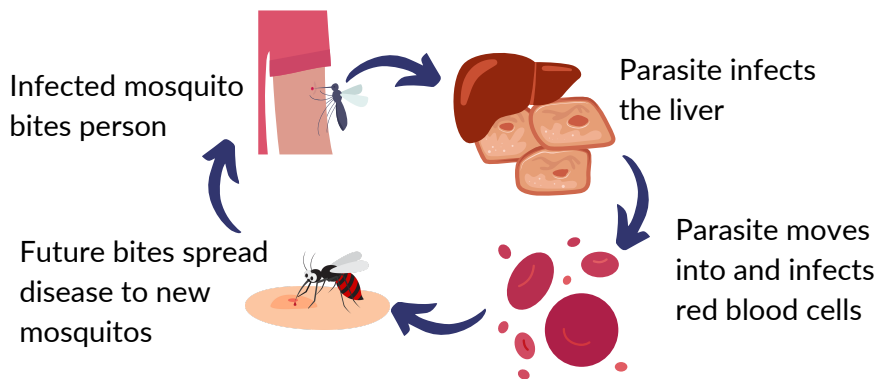


Malaria is a disease caused by infection with *Plasmodium* parasites. These parasites are spread from person to person by infected female *Anopheles* mosquitoes. Individuals can be infected with *Plasmodium* parasites and contract malaria with any exposure to infected mosquitoes. Five species of *Plasmodium* are capable of causing malaria in humans, but infections by ***Plasmodium falciparum* (*P. falciparum*)** and ***Plasmodium vivax* (*P. vivax*)** are the most prevalent.

Although most cases are contracted outside the country, the warm, humid climate of the south makes this geographical area of the U.S. vulnerable to local malaria outbreaks. **Recently, ten locally-acquired cases of malaria have been detected in the U.S. Seven cases of *P. vivax* malaria infections were found in Florida, one case was found in Texas, and one case in Arkansas. One malaria infection caused by *P. falciparum* has been detected in Maryland.** This is the first reported direct, local spread of malaria in the U.S. in over 20 years.

Disease Cycle



Symptoms

Symptoms of malaria usually develop **7-28 days post-infection** and include **fever, headache, muscle pains, chills, vomiting, and fatigue**. Clinical outcomes vary depending on the age, sex, nutritional status, and previous infection, among other factors, of each patient. Examples of severe cases of malaria include cerebral malaria (infection affecting the brain) and severe malarial anemia. **Although malaria can be fatal, most cases can be successfully treated.**

Each year, approximately **2,000** people in the U.S. are diagnosed with malaria.



Despite malaria being eradicated in the U.S. in the 1970s, there have been over 20 locally acquired infections since 1992, with 10 cases recently detected in Florida, Texas, Maryland, and Arkansas.

Burden of Malaria

- According to the World Health Organization, over half of the world's population is considered at risk for malaria.
- In 2021, there were approximately **247 million cases** and **619,000 deaths** due to malaria
- **95% of cases** and **96% of fatalities** occur in Africa, where children under 5 years of age are the most vulnerable and account for **80% of deaths**

Treatments

Chloroquine phosphate is the most commonly used first line treatment for *P. vivax* and *P. falciparum* infections, such as those recently transmitted in the U.S.

Those traveling outside the U.S. to areas of high malaria burden can take Atovaquone-Proguanil, Chloroquine, and Doxycycline, among others, **to prevent malaria.**



Research

Once endemic in parts of the U.S., efforts by the then newly established **Centers for Disease Control and Prevention (CDC)** led to the eradication of malaria. While recent cases in the U.S. caused by infection with *P. vivax* parasites are treatable with proper care, severe and harder to treat cases resulting from infection with *P. falciparum* parasites are a major driver of the humanitarian and economic burden malaria continues to exert worldwide. The federal government, with help from private partners, plays a pivotal role in malaria surveillance, research, and development.

The **National Institute of Allergy and Infectious Diseases (NIAID)**, at the National Institutes of Health conducts research into the biology of *Plasmodium* parasite species and mosquito control measures.

The Department of Defense, particularly the **Walter Reed Army Institute of Research (WRAIR)** and the **Naval Medical Research Command (NMRC)**, has played a crucial role throughout history in the global fight against malaria. WRAIR co-led the development of **the first malaria vaccine recommended by the World Health Organization for children living in areas of moderate to high malaria burden.** Both WRAIR and NMRC have played a role in the development of every malaria drug approved by the U.S. Food and Drug Administration.

Prevention

The CDC recommends some **helpful tips** for preventing mosquito bites.



Use an EPA-registered insect repellent



Dress appropriately



Stay indoors and only open windows fitted with mosquito screens



Sleep under a mosquito net