

Malaria: A serious threat.

Thomas Crook*

Editorial Office, Journal of Neuroinformatics and Neuroimaging, London, United Kingdom

Accepted November 21, 2021

Opinion

Malaria is a potentially deadly disease caused by a parasite that infects a specific species of mosquito that feeds on people. Plasmodium parasites produce malaria. The parasites are transmitted to humans by the bites of infected female Anopheles mosquitos, often known as "malaria vectors." Malaria is caused by five parasite species, two of which – *P. falciparum* and *P. vivax* – represent the greatest threat. *P. ovale*, *P. malariae*, and *P. knowlesi*, a form of malaria that naturally infects macaques in Southeast Asia, infect people as well, generating malaria that is transferred from animal to human ("zoonotic").

P. falciparum malaria is the most likely to cause severe infections and, if not treated immediately, may end in death. Malaria is a potentially fatal disease, although sickness and death may generally be avoided. *P. falciparum* was responsible for 99.7% of projected malaria cases in the WHO African Region in 2018. The WHO South-East Asia Region had 50% of the cases, the Eastern Mediterranean had 71%, and the Western Pacific had 65%. *P. vivax* is the most common parasite in the WHO Region of the Americas, accounting for 75% of malaria infections.

Malaria is still widespread in tropical and subtropical areas, despite its rarity in temperate climes. Malaria infects about 290 million people each year, and more than 400,000 people die as a result of the disease.

World health initiatives offer preventative medicines and insecticide-treated bed nets to shield individuals from mosquito bites in order to minimise malaria infections. A vaccine that is only partially effective is being tested in a few African nations, but there is no vaccination for tourists. The great majority of cases in the United States are among tourists and immigrants returning from malaria-endemic areas of the world, such as Sub-Saharan Africa and South Asia. Malaria threatened over half of the world's population in 2019. Sub-Saharan Africa has the highest number of malaria cases and deaths. The WHO areas of South-East Asia, the Eastern Mediterranean, the Western Pacific, and the Americas, on the other hand, are also at danger.

Some groups of people are at a far higher risk of getting malaria and developing severe illness than others. Infants, children under the age of five, pregnant women, and HIV/AIDS patients are among those affected, as are non-immune migrants, mobile groups, and travellers. National malaria control programmes must take extra precautions to safeguard these populations from malaria infection, taking into account their unique conditions.

Malaria is most commonly spread by the bites of female Anopheles mosquitos. There are around 400 distinct Anopheles mosquito species, with roughly 30 of them being important malaria carriers. All of the major vector species bite between

the hours of twilight and dawn. The strength of transmission is determined by parasite, vector, human host, and environmental variables.

Anopheles mosquitoes deposit their eggs in water, where they develop into larvae before becoming adult mosquitoes. Female mosquitoes are looking for a blood meal to feed their eggs. Each Anopheles mosquito species has a preferred aquatic environment; for example, some like tiny, shallow collections of fresh water, such as puddles and hoof prints, which are prevalent in tropical areas during the rainy season.

Transmission is more severe in areas where the mosquito lifecycle is longer (allowing the parasite to mature within the insect) and where the mosquito prefers to attack people rather than other animals. Because of the African vector species' extended lifetime and strong human-biting behaviour, Africa accounts for roughly 90% of the world's malaria cases. Transmission is also affected by environmental factors, such as rainfall patterns, temperature, and humidity, which can impact the amount and survival of mosquitoes. Transmission is seasonal in many locations, with a surge during and shortly after the wet season. Malaria epidemics can arise when climate and other factors favour malaria transmission in places where people have little or no immunity. They can also develop when persons with inadequate immunity relocate to places with high malaria transmission, for example, to look for job or as refugees.

Malaria elimination is defined as the purposeful cessation of local transmission of a certain malaria parasite species in a defined geographical area. To avoid the re-establishment of transmission, ongoing precautions are necessary. Malaria eradication is defined as the intentional decrease to zero of the worldwide incidence of malaria infection caused by human malaria parasites. Once eradication has been accomplished, interventions are no longer necessary. Globally, the eradication net is expanding, with more nations striving towards malaria abolition. In 2019, 27 nations reported less than 100 indigenous instances of the illness, an increase from six countries in 2000.

Countries that have had at least three consecutive years with no indigenous malaria cases are eligible to seek for WHO certification of malaria eradication. The WHO Director-General has certified 11 countries as malaria-free over the last two decades: The United Arab Emirates (2007), Morocco (2010), Turkmenistan (2010), Armenia (2011), Sri Lanka (2016), Kyrgyzstan (2016), Paraguay (2018), Uzbekistan (2018), Algeria (2019), Argentina (2019), and El Salvador (2021).

RTS,S/AS01 (RTS,S) is the first and only vaccination to demonstrate that it may dramatically reduce malaria, including life-threatening severe malaria, in young African children. It is effective against *P. falciparum*, the most lethal malaria parasite

Citation: Crook T. Malaria: A serious threat. *J Parasit Dis Diagn Ther.* 2021;6(6):1-2.

in the world and the most common in Africa. Over a four-year period, the vaccine averted roughly 4 in 10 occurrences

of malaria among children who got four doses in large-scale clinical trials.

***Correspondence to:**

Thomas Crook
Editorial Office
Journal of Parasitic Diseases: Diagnosis and
Therapy
London
United Kingdom
E-mail: tcook12@gmail.com