
Malaria

Frequently Asked Questions

1. What is malaria?

Malaria is a disease presenting with fever caused by blood parasites of the genus *Plasmodium*, which are transmitted via the bites of infected mosquitoes. Complications of malaria include kidney failure, seizures (fits), coma and death. South Africa has undertaken to eliminate local malaria transmission by 2018. Presently fewer than 15% of over approximately 5400 cases of malaria reported annually arise through local transmission.

2. Who can get malaria?

Persons who visit malaria endemic areas are at risk of getting malaria. In South Africa, persons who are at risk of severe and complicated malaria includes young children living in malaria areas, pregnant women and persons living with HIV/AIDS.

3. Where does malaria occur in South Africa?

Malaria transmission is limited to the north-eastern part of South Africa, mainly in the low altitude (below 1000 m) areas of Limpopo, Mpumalanga and northern KwaZulu-Natal provinces. In years gone by, limited focal transmission occasionally occurred in the North West and Northern Cape provinces along the Molopo and Orange rivers. Malaria is distinctly seasonal in South Africa, with the highest risk during the wet summer months (September to May). Malaria occurs mainly in tropical developing countries in sub-Saharan Africa, Central and South America, Asia and Oceania. Very rarely, malaria has been documented in non-endemic areas as infected mosquitoes can travel long distances by road, rail and air transport and transmit the infection (this is called 'odyssean malaria').

4. How is malaria transmitted?

Malaria is transmitted to humans by certain species of *Anopheles* mosquito. There are four main parasite species. The *plasmodium falciparum* causes falciparum malaria, *plasmodium vivax* causes vivax malaria, causing quartan or malariae malaria. *Plasmodium falciparum* is the predominant species in South Africa, with very few cases caused by *Plasmodium vivax*. *Plasmodium ovale* and *Plasmodium malariae* are not locally transmitted, but have been identified in returning travellers.

5. Does malaria affect animals?

Some animals, e.g. birds, rodents, reptiles, can be infected with malaria species that are different from the human ones mentioned above. Apes and humans can share some malaria species (e.g. *P. knowlesi*), but otherwise animal malaria does not normally affect humans.

6. **What are the signs and symptoms of malaria?**

The incubation period of malaria may be as short as 7 days but is on average 10 to 21 days in patients who are non-immune and have not taken chemoprophylaxis. The incubation periods may be prolonged in patients who have taken prophylaxis or have taken certain antibiotics for other reasons. The initial symptoms of malaria are non-specific and include acute onset of fever and influenza-like symptoms. In adults, headache, rigors with cold shivers and sweating, and myalgia, are common. Later, lassitude, fatigue, abdominal discomfort, diarrhoea, loss of appetite, nausea and vomiting, sore throat, and cough may occur. In young children malaria may present with fever lethargy, poor feeding, vomiting, diarrhoea or cough.

7. **How is malaria diagnosed?**

The diagnosis of malaria should be considered in any patient with fever who has travelled to, or lives in a malaria endemic area, even if chemoprophylaxis has been taken. Confirmation of malaria is made by the examination of blood for parasites, either by blood smear (microscopy), or a rapid malaria test. A negative blood test or rapid malaria test does not exclude the presence of malaria; repeat tests should be made until a diagnosis is confirmed or symptoms resolve.

8. **How is malaria treated?**

Parenteral artesunate is the preferred treatment for complicated malaria, with intravenous quinine as an alternative (with an initial loading dose of 20mg/kg over four hours in 5% dextrose). Guidelines for the treatment of malaria may be found on the NICD website at www.nicd.ac.za under the 'Diseases A-Z' tab.

9. **How can malaria be prevented?**

Appropriate use of drug and non-drug prophylactic measures can prevent most travellers to malaria endemic areas from contracting the disease.

Mosquito avoidance: Mosquito contact can be significantly reduced by remaining indoors between dusk and dawn and by wearing long-sleeved, preferably light coloured clothing. Since mosquitoes tend to bite below the waist and especially below the knees, the wearing of long trousers and socks is recommended. Mosquito repellents can be applied to exposed skin. Vaporization mats and mosquito coils can be used indoors. Mosquito screens can be used on windows and doors, particularly in malaria-endemic areas. Ceiling fans and air conditioners are effective in disturbing mosquito feeding. Bed nets impregnated in insecticides are useful in preventing mosquito bites.

Chemoprophylaxis: Travellers to malaria endemic areas in South Africa and surrounding countries are advised to take appropriate chemoprophylaxis, as well as observe measures to prevent mosquito bites. Currently recommended chemoprophylactic regimens include one of the following: mefloquine, doxycycline or atovaquone-proguanil. Consult current guidelines for detailed information on dose and duration of prophylaxis.

10. **Where can I find out more information**

Healthcare workers should contact the NICD Hotline +27 82 883 9920 (for use by healthcare professionals only). For laboratory-related queries, contact the parasitology reference laboratory at NICD 011-5550311 or 011-555-0308