



What is malaria?

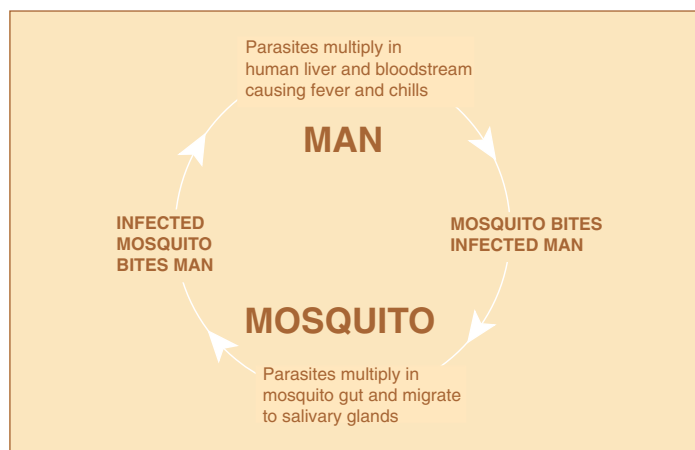
Malaria is a life-threatening parasitic disease transmitted by mosquitoes. It was once thought that the disease came from fetid marshes, hence the name 'mal aria,' (bad air). In 1880, scientists discovered the real cause of malaria—a one-cell parasite called plasmodium. Later they discovered that the parasite is transmitted from person to person through the bite of a female Anopheles mosquito, which requires blood to nurture her eggs.

Today approximately 40% of the world's population—mostly those living in the world's poorest countries—is at risk of malaria. The disease was once more widespread but it was successfully eliminated from many countries with temperate climates during the mid 20th century. Today malaria is found throughout the tropical and sub-tropical regions of the world and causes more than 300 million acute illnesses and at least one million deaths annually.

Ninety per cent of deaths due to malaria occur in Africa south of the Sahara—mostly among young children. Malaria kills an African child every 30 seconds. Many children who survive an episode of severe malaria may suffer from learning impairments or brain damage. Pregnant women and their unborn children are also particularly vulnerable to malaria, which is a major cause of perinatal mortality, low birth weight and maternal anaemia

There are four types of human malaria—*Plasmodium vivax*, *P. malariae*, *P. ovale* and *P. falciparum*. *P. vivax* and *P. falciparum* are the most common and *falciparum* the most deadly type of malaria infection. *Plasmodium falciparum* malaria is most common in Africa, south of the Sahara, accounting in large part for the extremely high mortality in this region. There are also worrying indications of the spread of *P. falciparum* malaria into new regions of the world and its reappearance in areas where it had been eliminated.

The malaria parasite enters the human host when an infected Anopheles mosquito takes a blood meal. Inside the human host,



Man and mosquito play complementary roles in the malaria cycle.



A child with severe malaria. Malaria kills an African child every 30 seconds.

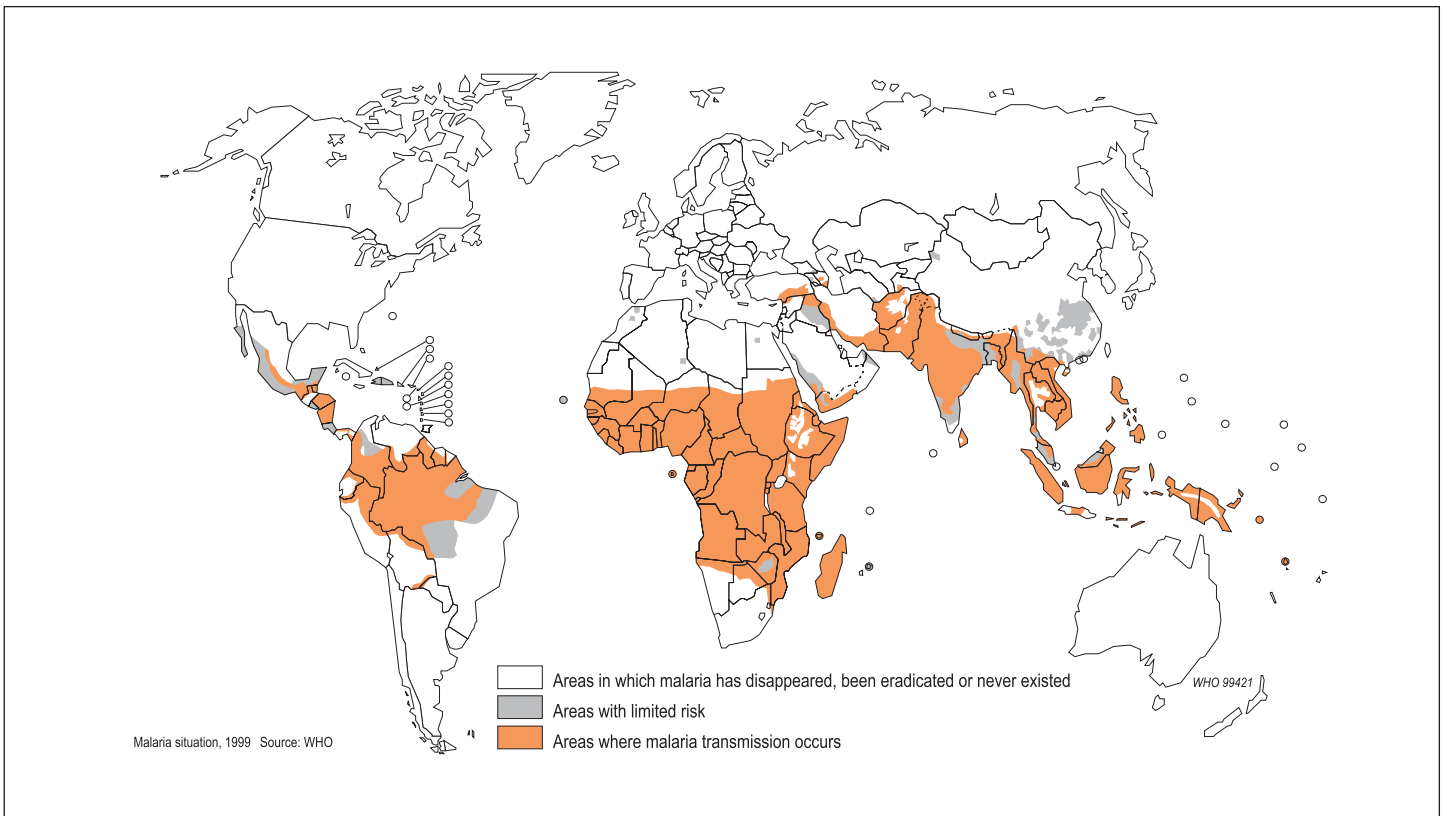
the parasite undergoes a series of changes as part of its complex life-cycle. Its various stages allow plasmodia to evade the immune system, infect the liver and red blood cells, and finally develop into a form that is able to infect a mosquito again when it bites an infected person. Inside the mosquito, the parasite matures until it reaches the sexual stage where it can again infect a human host when the mosquito takes her next blood meal, 10 to 14 or more days later.

Malaria symptoms appear about 9 to 14 days after the infectious mosquito bite, although this varies with different plasmodium species. Typically, malaria produces fever, headache, vomiting and other flu-like symptoms. If drugs are not available for treatment or the parasites are resistant to them, the infection can progress rapidly to become life-threatening. Malaria can kill by infecting and destroying red blood cells (anaemia) and by clogging the capillaries that carry blood to the brain (cerebral malaria) or other vital organs.

Malaria, together with HIV/AIDS and TB, is one of the major public health challenges undermining development in the poorest countries in the world.

Malaria parasites are developing unacceptable levels of resistance to one drug after another and many insecticides are no longer useful against mosquitoes transmitting the disease. Years of vaccine research have produced few hopeful candidates and although scientists are redoubling the search, an effective vaccine is at best years away.

Science still has no magic bullet for malaria and many doubt that such a single solution will ever exist. Nevertheless, effective low-cost strategies are available for its treatment, prevention

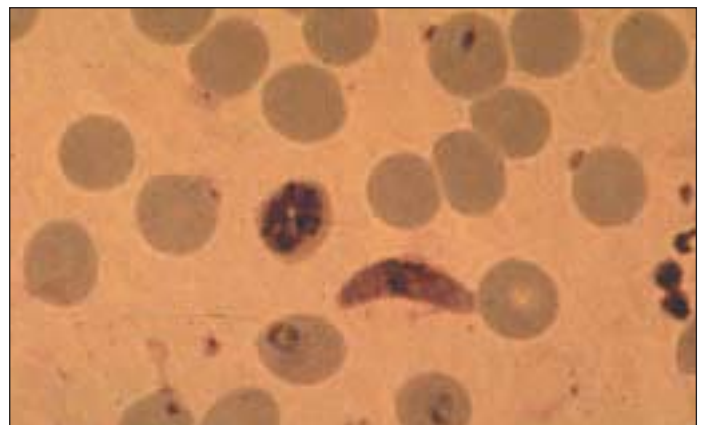


Above: world malaria situation. Malaria is endemic to tropical and subtropical regions.

and control and the Roll Back Malaria global partnership is vigorously promoting them in Africa and other malaria-endemic regions of the world. Mosquito nets treated with insecticide reduce malaria transmission and child deaths. Prevention of malaria in pregnant women, through measures such as Intermittent Preventive Treatment and the use of insecticide-treated nets (ITNs), results in improvement in maternal health, infant health and survival. Prompt access to treatment with effective up-to-date medicines, such as artemisinin-based combination therapies (ACTs), saves lives. If countries can apply these and other measures on a wide scale and monitor them, then the burden of malaria will be significantly reduced.



Above: anopheles mosquito in characteristic biting and resting position. Below: microscopist's view of Plasmodium falciparum.



Pictures: WHO/TDR, WHO/PIrot



Roll Back Malaria is a global partnership initiated by WHO, UNDP, UNICEF and the World Bank in 1998. It seeks to work with governments, other development agencies, NGOs, and private sector companies to reduce the human and socioeconomic costs of malaria.