

# MALARIA

## *What is malaria?*

Malaria is a tropical infection caused by a blood parasite called *Plasmodium*. There are four species of human *Plasmodium*: *P. falciparum*, *P. malariae*, *P. ovale* and *P. vivax*. In Kenya, by far the commonest species is *P. falciparum*. Unfortunately, it causes the most serious type of malaria which, if untreated, is potentially fatal. Cerebral malaria is a complication of *falciparum* malaria. Today, thousands of people still become ill and hundreds die of *falciparum* malaria every year, particularly among non-immune travellers and children under five years of age. The other three species, though much rarer and hardly ever fatal, can cause illness and sometimes recur weeks or months after treatment.

## *Transmission and spread of malaria*

The *Plasmodium* parasite is transmitted to man by the bite of a female *Anopheles* mosquito. Contrary to popular belief, not all biting mosquitoes transmit malaria. In fact, the mosquitoes which commonly rest on your bedroom wall and whine in your ear at night are often *Culex* mosquitoes, which are unable to carry malaria. Only various species of *Anopheles* mosquitoes are vectors of the disease. Quite often, you may not even know that you have been bitten.

The life cycle of the malaria parasite is maintained in relatively hot, humid climates, such as the coastal and western regions of Kenya. In such areas, there is year-round transmission of malaria and residents actually develop a partial immunity to the disease (if they survive beyond the age of five). In contrast, the highland regions of Kenya, especially around Eldoret, Kericho, Kisii and Mount Kenya, experience seasonal malaria transmission if temperatures become warm and rainfall encourages mosquito breeding. Residents of such areas do not develop immunity and suffer much more serious illness than their lowland neighbours – hence the panic when there is an outbreak of “highland malaria”. In Nairobi, the climate and altitude are not conducive for malaria transmission at any time. However, residents living near train and bus entry and exit points are at a slight risk of being bitten by infected *Anopheles* mosquitoes arriving with the transport. The vast majority of malaria cases seen in Nairobi are explained by travel to the Coast or “up-country” locations in the previous two weeks or so.

## *Persons at high risk*

Travellers and tourists who have no immunity, because of lack of exposure, are most at risk. Persons with partial immunity travelling out of their home will lose their immunity quite quickly, allowing malaria to attack. Pregnant women and children under five years are especially vulnerable to infection.

## *Development of the illness*

It takes a minimum of 9 to 10 days after being bitten by an infected mosquito for symptoms of malaria to develop. After gaining entry into the human host via the mosquito bite, the malaria parasite invades the blood stream via the liver. Whilst in the liver, the parasite multiplies but does not cause illness. The parasites then enter the red blood cells where they multiply and invade new cells. As the parasite multiplies, the disease becomes more serious and the infected red cells are destroyed.

Malaria is the “master of disguise” and can begin with ‘flu-like symptoms, diarrhoea, vomiting, back pains, joint pains, headache, cough or general malaise. Whatever symptoms develop first, **fever** eventually develops and symptoms become rapidly worse within a day or two in persons with no immunity. Fever is accompanied by severe chills, sweating and rigors. Medical attention must be sought if malaria is suspected, to avoid hospitalisation, or worse still, the grave. Cerebral malaria is a common outcome of untreated infection. Other serious complications may involve the kidneys and lungs.

### *Prevention advice*

Travellers within Kenya or beyond to countries at risk of malaria (this includes all East African countries), should try to avoid malaria by taking certain precautions. *Anopheles* mosquitoes bite from dusk to dawn, with peak biting activity in the middle of the night. It is important to try to avoid being bitten, by sleeping under a bed-net (insecticide-treated if possible) and by applying mosquito repellents to all your exposed skin in the evening, avoiding the eyes. There are a few prophylactic drugs which can prevent infection with malaria with varying efficacy. Some are very expensive and others may lead to disturbing side effects, so it is advisable to consult your doctor about the options available.

If you have travelled to a malaria-prone area and suspect that you are developing malaria symptoms, you should go to a reputable laboratory for a malaria test or consult a doctor. There is a confusing array of treatment options available and just like the prophylactic drugs, some are weakly effective while others are very good. If you are travelling to areas where medical facilities are rare, it is wise to carry an effective drug for treatment with you. The malaria parasite is an expert in developing resistance to drugs so it is important to consult your doctor on the best options available for both prophylaxis and treatment.

Remember, malaria is a killer and suspected malaria should never be viewed lightly or with a “let’s wait and see attitude”. There are many sad stories of travellers and tourists dying from malaria on returning home, when it could have been easily prevented or treated if medical attention had been sought within the first two to three days of developing the “flu-like” symptoms.