

Malaria Outbreak - Stay Safe!

Malaria is a sometimes fatal disease caused by a parasite that usually infects a certain type of mosquito. This type of mosquito is the female of the genus *Anopheles*. People who get malaria are typically very sick with high fevers, shaking chills, and flu-like illness. A recent outbreak of this illness in Mali has caught my attention, and I will be going over preventative methods into stopping this from spreading further. Additionally, more symptoms of malaria include headaches, vomiting, muscle pains and diarrhea. Approximately 2,000 cases of malaria are diagnosed annually in the United States, the majority of these cases are from travellers or immigrants returning from parts of the world where transmissions occur. The World Health Organisation estimates that there were 228 million cases of malaria globally in 2018, and 405,000 of these cases resulted in death¹.

Generally, people are infected with malaria after being bitten by an infectious female *Anopheles* mosquito. Only *Anopheles* mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken from an infected individual. When a mosquito bites an infected person, a small amount of blood is extracted which contains microscopic malaria parasites called plasmodium. About 1 week later, when the mosquito takes its next blood meal, these parasites mix with the mosquito's saliva and are injected into the person being bitten¹.

Most people, at the beginning of the disease, have fever, sweats, chills, headaches, malaise, muscle aches, nausea, and vomiting. Malaria can very rapidly become a severe and life-threatening disease. The surest way for you and your health-care provider to know whether you have malaria is to have a diagnostic test where a drop of your blood is examined under a microscope for the presence of malaria parasites. If you are sick and there is any suspicion of malaria (for example, if you have recently traveled in a country where malaria transmission occurs), the test should be performed without delay¹.

Anyone can get malaria. Due to the fact that the malaria parasite is found in red blood cells of an infected person, malaria can also be transmitted through blood transfusion, organ transplant, or the shared use of needles or syringes contaminated with blood. Malaria may also be transmitted from a mother to her unborn infant before or during delivery, this is known as congenital malaria. Malaria is not spread from person to person like a cold or the flu, and it cannot be sexually transmitted. You cannot get malaria from casual contact with malaria-infected people, such as sitting next to someone who has malaria. Most cases occur in people who live in countries with malaria transmission. People from countries with no malaria can become infected when they travel to countries with malaria or through a blood transfusion (although this is very rare)¹.

Plasmodium falciparum is the type of malaria that most often causes severe and life-threatening malaria; this parasite is very common in many countries in Africa south of the Sahara desert. People who are heavily exposed to the bites of mosquitoes infected with *P. falciparum* are most at risk of dying from malaria. People who have little or no immunity to malaria, such as young children and pregnant women or travelers coming from areas with no malaria, are more likely to become very sick and die. Poor people living in rural areas who lack access to health care are at greater risk for this disease. As a result of all these factors,

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an estimated 90% of deaths due to malaria occur in Africa, south of the Sahara; most of these deaths occur in children under 5 years of age¹.

Anyone who used to live in a country where malaria transmission occurs should take precautions against contracting malaria if returning home from a different region where there are little to no infections. During the time that you have spent away from home, you have lost any malaria immunity that you might have had while living in your native country. Without frequent exposure to malaria parasites, your immune system has lost its ability to fight malaria. You are now as much at risk as someone who was born in a country where transmissions are rare and are not able to fight malaria¹.

In this section of the essay, I will cover preventative methods to stop the contraction of malaria. The first method is to stay somewhere that has effective air conditioning and screening on doors and windows. If this isn't possible, make sure doors and windows close properly. Secondly, if you're not sleeping in an air-conditioned room, sleep under an intact mosquito net that's been treated with insecticide. Additionally, use insect repellent on your skin and in sleeping environments. Remember to reapply it frequently. The most effective repellents contain diethyltoluamide (DEET) and are available in sprays, roll-ons, sticks and creams. Finally, wear light, loose-fitting trousers rather than shorts, and wear shirts with long sleeves. This is particularly important during early evening and at night, when mosquitoes prefer to feed².

To treat malaria, you need antimalarials. If malaria is diagnosed and treated promptly, a full recovery can be expected. Treatment should be started as soon as a blood test confirms malaria. Many of the same antimalarial medicines used to prevent malaria can also be used to treat the disease. However, if you've taken an antimalarial to prevent malaria, you shouldn't take the same one to treat it. This means it's important to tell your doctor the name of the antimalarials you took. Your doctor may recommend using a combination of different antimalarials to overcome strains of malaria that have become resistant to single types of medication. Antimalarial medication is usually given as tablets or capsules. If someone is very ill, it will be given through a drip into a vein in the arm in hospital. Treatment for malaria can leave you feeling very tired and weak for several weeks².

To conclude, malaria is a very deadly disease which causes a lot of death in Africa, South America and parts of Asia. In this circumstance in Mali, I believe it should be essential to have DEET applied to people, as well as screening of doors and windows. It is transmitted by the female Anopheles mosquito and the main symptoms of malaria are a fever, sweats, chills, headaches, malaise, muscle aches, nausea, and vomiting. Additionally, malaria can also be transmitted through blood transfusion, organ transplant, or the shared use of needles or syringes contaminated with blood. Anybody can catch malaria and you do develop immunity to it if you are around the parasite a lot.

¹ = www.cdc.com

² = www.nhs.uk