

# Malaria

Information and advice for patients

## Microbiology

### What is malaria?

Malaria is an infection caused by a small parasite called Plasmodium. The parasite lives inside your red blood cells and can cause problems as a result of this. In some forms of malaria, if it isn't diagnosed and treated promptly, it can be fatal.

There are five different types of parasite which are known to cause infection in humans, which are:

**Plasmodium falciparum** – mainly found in Africa, it's the most common type of malaria parasite and is responsible for most malaria deaths worldwide.

**Plasmodium vivax** – mainly found in Asia and South America, this parasite causes milder symptoms than Plasmodium falciparum, but it can stay in the liver for up to three years, which can result in relapses of infection.

**Plasmodium ovale** – fairly uncommon and usually found in West Africa, it can remain in your liver for several years without producing symptoms.

**Plasmodium malariae** – this is quite rare and usually only found in Africa.

**Plasmodium knowlesi** – this is very rare and found in parts of Southeast Asia.

The treatment is slightly different depending on the type of parasite that you have.

All cases of malaria are caught outside of the U.K in places where malaria is common.

There are around 1300-1800 cases of malaria, which are reported each year in the UK. In 2016, 1,618 cases of imported malaria were reported in the UK. Death is rare in the UK. 2 - 11 deaths are reported each year. Six deaths were reported in the UK in 2016.

### What causes malaria?

Infections happen after being bitten by infected mosquitoes when visiting a place where these infected mosquitoes live.

If you travelled with other people, they may also have malaria and should seek medical advice if they have any symptoms (fever, headache, muscle aches, and feeling tired are the most common).

### Am I infectious?

No - you cannot pass malaria on whilst you remain in the U.K. It needs a special type of mosquito to be passed on between people and this mosquito does not exist here.

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### What are the symptoms?

Initial symptoms of malaria are often non-specific and include:

- Fever
- Chills
- Sweats
- Headaches
- Muscle pains
- Nausea and vomiting
- Feeling tired

These can often be found in other conditions, such as viral infections (the “flu”).

Occasionally, malaria caused by a parasite called *Plasmodium falciparum*, which can lead to confusion, reduced levels of consciousness, anaemia or breathing difficulties.

Pregnant women can also be more severely affected by malaria due to *Plasmodium falciparum* than non-pregnant people. The infection can affect both mum and baby, and can be associated with many complications. In some cases, it can be fatal for either mum or baby, and sometimes fatal for both. Hence, it is important to seek urgent medical advice if you think you have malaria. Hence, it is important to seek urgent medical advice if you think you have malaria.

### How is it diagnosed?

The diagnosis of malaria is made using a special blood test called a blood film, to look for the parasites. Another test performed looks for the antigen produced by the parasites. Because the parasites are usually present in the blood at particular times, it is important to take blood when the patient has a temperature. Often more than one blood test is required to look for these parasites, as if they are present in low numbers they may be difficult to detect.

In addition, other blood tests will be undertaken in order to check your kidney and liver function, and look for anaemia (a condition that develops when your blood lacks enough healthy red blood cells), as malaria can affect these organs and many others.

We will also look for blood stream infections with other organisms, which can be seen with *Plasmodium falciparum* malaria, although this is rare.

### How is it treated?

Treatment depends on the type of malaria caught and how infected you are. The treatment aims to kill the malaria parasites in the blood and other organs.

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Treatment could mean using tablets or intravenous medication (through a drip in your arm) which will require you to stay in hospital. In some forms of malaria where the parasites can "hide" in the body, you need to take more than one type of tablet, to prevent malaria from coming back again.

It is important to take all the medicines you have been given as advised. There is a risk of some stages of the parasite causing the infection to come back and this is reduced by taking the full course of medicine.

**If you get a fever (temperature above 38°C) please seek the advice of a doctor and tell them about recently having had malaria.**

### What are the side effects and the risks of the treatment(s)?

The most common side effects are nausea and vomiting, which can also be due to the malaria itself. Other side effects which are less common include anaemia when on artesunate (a medication used to treat malaria) which again can be due to the malaria itself.

If you are given a drug called quinine, you will need to have your heart monitored as this can affect the electrical activity of your heart (although this rarely happens) and this can be treated.

Because there is a variety of treatments available, you will be advised as to the potential side effects of any medication you are given. Side effects other than nausea and vomiting are rare.

There are no alternatives to the treatment we can give in hospital; we give the best medication based on the patient's condition and infection.

### Can I get malaria again?

Yes, if you travel to an area with malaria you can catch it again.

If you travel to places where there is a malaria risk, make sure you use measures to protect you from malaria.

You can find out up-to-date information about ways to avoid malaria from a local travel clinic or your GP.

### Self-help

It is important to seek urgent medical help if you think you might have malaria. Prompt diagnosis and treatment can reduce the complications that can occur if treatment is delayed or not given.

Please let your doctor or nurse know all the countries you have visited, including stopovers, plus details of any malaria prophylactic medication you have taken.

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Please also advise them of any missed doses; this is very important as it helps us to understand if you are at risk of what is known as partially treated malaria.

In these cases we might be able to use the same medication as the one you took as prophylaxis.

#### Can the condition be prevented?

All travellers to countries where malaria-infected mosquitoes live are advised to take anti-malarial prophylaxis, in the form of tablets. It is important to take **ALL** of the tablets as prescribed; that is before, during and after travel.

If you can avoid being bitten by a mosquito, this will greatly reduce the risk of infection. You can do so by wearing long clothes, sleeping under a mosquito net, and using an insect repellent.

#### Symptoms to report

If you have been to a country where malaria infected mosquitoes live and feel unwell with a temperature (above 38°C), and/or muscle aches, chills, sweats, headaches, nausea and vomiting or feel generally unwell, please seek medical attention.

For more information about countries where there is a malaria risk, please visit the Fit for Travel website [www.fitfortravel.nhs.uk/destinations.aspx](http://www.fitfortravel.nhs.uk/destinations.aspx)

#### Contact details

For further information please contact the duty microbiologist on 0121 507 4261 Monday to Friday 9am-5pm.

#### Further information

There is a small risk of problems with your blood count after some of the medicines. Your doctor will arrange for a blood test in one to two weeks to check if you are at risk.

If you donate blood, you will need to inform the National Blood Service about having had malaria – you will likely be stopped from donation for a period of time.

Your doctors have to inform Public Health England about all cases of malaria; do not be alarmed if they contact you after you have left hospital.

**If an appointment has been made for you to attend for further tests or results, it is important that you attend this.**

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### Sources used in this leaflet:

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- NHS Choices, "Malaria", accessed online: [www.nhs.uk/Conditions/Malaria/Pages/Introduction.aspx](http://www.nhs.uk/Conditions/Malaria/Pages/Introduction.aspx), November 2015

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