CONDITION

Malaria

Malaria is a mosquito-borne infection caused by parasites that multiply in the liver and blood.

WHAT IT IS
Mosquito-borne parasitic infection affecting the blood

BODY SYSTEM
Blood, liver, brain, kidneys, and lungs

MAIN SYMPTOMS
Fever, chills, headache, sweating

WHAT CAUSES IT
Plasmodium parasites spread mainly by mosquitoes

HOW IT IS DIAGNOSED
Blood microscopy or malaria rapid diagnostic test

MAIN TREATMENT
Antimalarial medicines and supportive hospital care when severe

CAN IT BE CURED?
Yes, correct antimalarial treatment can clear it

IS IT AN EMERGENCY?
Sometimes, with confusion, breathing trouble, seizures, or collapse

LONG-TERM OUTLOOK
Usually full recovery; severe malaria can be fatal

Overview

Malaria is an infection caused by microscopic parasites called Plasmodium . It usually spreads through the bite of an infected female Anopheles mosquito.

The parasites first enter the liver. They then move into red blood cells, where they multiply and cause symptoms such as fever, chills, headache, and sweating.

Several Plasmodium species cause malaria in people. Plasmodium falciparum is especially important because it can become severe quickly. Plasmodium knowlesi can also worsen rapidly. Plasmodium vivax and Plasmodium ovale can leave inactive parasites in the liver, leading to another episode months or occasionally years later.

Malaria occurs mainly in tropical and subtropical regions. The risk differs greatly between

countries and even between areas within one country. Anyone who develops a fever during or after travel to a malaria area needs prompt medical assessment.

With early diagnosis and the correct treatment, most people recover. Delayed or incomplete treatment increases the risk of serious complications.

Symptoms

Symptoms may begin within a few weeks of an infected mosquito bite, but the timing is not predictable. Some types of malaria can cause illness months or longer after travel.

Common symptoms include:

Some people have repeated cycles of fever and chills. However, fever does not always follow a regular pattern, especially early in the infection. A regular fever cycle is not needed for malaria to be possible.

Symptoms can resemble flu, COVID-19, a stomach infection, or other travel-related infections. Symptoms alone cannot confirm malaria.

Signs of severe malaria can include confusion, unusual drowsiness, seizures, breathing difficulty, yellow skin or eyes, very dark urine, reduced urination, abnormal bleeding, or collapse. Severe malaria is a medical emergency.

Young children, pregnant people, older adults, and people with weakened immune systems may become seriously unwell. Travellers who did not grow up in a malaria area often have little or no protective immunity.

- Fever, chills, and sweating
- Headache and muscle aches
- Marked tiredness or weakness
- Nausea, vomiting, diarrhoea, or abdominal discomfort

Causes and risk factors

Malaria is caused by Plasmodium parasites. Most infections follow a bite from an infected mosquito. The mosquitoes that spread malaria usually bite between dusk and dawn.

Risk is higher when you live in or visit an area where malaria is present, particularly if you do not use recommended preventive medicine or mosquito protection. Risk can change with the season, altitude, rainfall, local control measures, and parasite resistance to medicines.

Preventive tablets greatly reduce risk but do not provide complete protection. Missing doses or stopping too early may make them less effective.

Malaria does not usually spread through ordinary contact. You cannot catch it by sharing food, touching someone, or breathing the same air. Rare routes include infected blood transfusions, shared needles, organ transplantation, and transmission from a pregnant person to their baby.

Previous malaria does not provide reliable lifelong protection. People who have lived in malaria areas may develop partial immunity, but this can decrease after moving away.

Diagnosis

Malaria is confirmed by finding evidence of the parasite in a blood sample. Testing should be arranged promptly when malaria is possible.

Microscopy uses a laboratory examination of blood films. It can identify the parasite species and estimate how many red blood cells are infected. This information helps guide treatment and assess severity.

A rapid diagnostic test looks for parasite proteins in the blood. It can provide a faster result when expert microscopy is not immediately available, but microscopy may still be needed to confirm the species and parasite level.

One negative test may not completely exclude malaria when symptoms and travel history strongly suggest it. Blood tests may need to be repeated because parasite levels can be too low to detect early in the infection.

Other tests may check blood cell counts, blood sugar, kidney and liver function, or signs that the infection is affecting breathing or circulation. Polymerase chain reaction, or PCR, can identify parasite genetic material but is not usually the first test used for urgent decisions.

Tell the healthcare team where you travelled, when you returned, and whether you took malaria prevention medicine. Include stopovers and rural trips, even if they were brief.

Treatment and management

Malaria is treated with antimalarial medicine. Treatment should begin promptly once malaria is confirmed, or sooner when severe malaria is strongly suspected.

The choice of medicine is based on:

Uncomplicated malaria is often treated with a combination of antimalarial medicines taken by mouth. Artemisinin-based combination therapies are widely used because they combine fast

parasite clearance with a second medicine that helps clear remaining parasites.

Severe malaria requires hospital care and intravenous treatment. Intravenous artesunate is commonly used, followed by a complete course of oral antimalarial medicine when the person can take it. Hospital care may also include fluids, oxygen, blood sugar management, blood transfusion, kidney support, or seizure treatment.

Malaria caused by P. vivax or P. ovale may require additional medicine to clear inactive liver parasites and prevent relapse. A blood test for glucose-6-phosphate dehydrogenase, or G6PD, deficiency is needed before certain medicines are used because they can damage red blood cells in people with this inherited condition.

Complete the full treatment course, even if symptoms improve quickly. Vomiting doses or stopping early can prevent complete parasite clearance. Follow-up blood tests may be needed after severe infection, persistent symptoms, or certain treatments.

Medicines commonly used for this include chloroquine and tafenoquine . Which one suits you, if any, is a decision for you and your doctor.

- The Plasmodium species
- Where the infection was acquired
- Whether the infection is severe
- Local patterns of medicine resistance
- Pregnancy, age, other conditions, and medicines already taken

Complications

Severe malaria can affect several organs at once. It is most often associated with P. falciparum , although other species can also cause serious illness.

Possible complications include:

Malaria during pregnancy increases risks for both the pregnant person and the baby. These include severe anaemia, miscarriage, premature birth, restricted fetal growth, and low birth weight.

Rarely, anaemia can develop after treatment for severe malaria, including after intravenous artesunate. Follow-up testing may be arranged to check for this.

- Reduced consciousness, seizures, or coma from malaria affecting the brain
- Severe anaemia from the destruction of red blood cells

- Low blood sugar, especially in children and during pregnancy
- Acute kidney injury or very dark urine
- Breathing failure or fluid in the lungs
- Jaundice from liver and red blood cell damage
- Shock, abnormal bleeding, or failure of several organs

Prevention

There is no single measure that prevents every malaria infection. If you are travelling, seek destination-specific advice well before departure. Recommended preventive medicine differs by location because malaria species and drug resistance are not the same everywhere.

If preventive tablets are advised, they may need to be taken before, during, and after travel. The timing depends on the medicine. Take them exactly as directed and do not assume that tablets used for a previous trip are suitable for a new destination.

Reduce mosquito bites by:

Malaria vaccines are used for children in some countries where malaria is common. They lower the risk of illness but do not replace mosquito control, prompt testing, or other prevention measures. They are not a routine substitute for traveller prevention medicine.

No preventive approach is completely effective. A fever during or after travel still needs urgent assessment, even if you took every dose correctly.

- Sleeping under an insecticide-treated mosquito net when rooms are not screened
- Using an effective insect repellent on exposed skin
- Wearing long sleeves, long trousers, and socks after dusk
- Choosing rooms with screens or air conditioning where possible

Living with it and what to expect

Many people with uncomplicated malaria begin to improve after effective treatment, although tiredness and weakness may continue for days or weeks. Recovery can take longer after severe infection, anaemia, kidney injury, or a hospital stay.

Follow-up depends on the parasite species, illness severity, and treatment used. You may need repeat blood tests to confirm that parasite levels are falling and to check blood counts or

organ function.

Most people who receive timely, effective treatment recover without lasting problems. Severe malaria may require rehabilitation and longer follow-up if it has affected the brain, lungs, or kidneys. Some people have ongoing problems after cerebral malaria, but this is not the usual course for uncomplicated infection.

A later fever is not always a new infection. P. vivax and P. ovale can relapse from inactive liver parasites. Malaria can also return if the original infection was not fully cleared. Any new fever after treatment should be medically assessed rather than assumed to be malaria or a harmless relapse.

Having malaria once does not prevent another infection. If you return to a malaria area, you still need current advice about preventive medicine and mosquito protection.

When to get medical help

Seek urgent same-day medical assessment if you develop a fever, chills, sweating, or flu-like illness while in a malaria area or after returning from one. Symptoms may appear months or occasionally longer after travel.

Tell the healthcare team immediately that you have travelled to an area where malaria occurs. Mention the countries, regions, dates, and preventive medicine taken. Do not wait for a routine appointment if malaria is possible.

Call emergency services or go to an emergency department for:

Routine follow-up is different from emergency care. Keep planned appointments and complete any repeat blood tests after treatment. Seek earlier review if fever returns, symptoms are not improving, or you cannot keep the medicine down.

- Confusion, fainting, unusual drowsiness, or difficulty waking
- A seizure
- Severe breathing difficulty
- Collapse, severe weakness, or signs of shock
- Inability to drink or repeated vomiting
- Very dark urine, little urine, or yellow skin and eyes

Common questions

Is malaria contagious?

Not through normal everyday contact. Malaria is usually spread by infected mosquitoes. It cannot be passed by hugging, coughing, sharing utensils, or having sex. Rare transmission can occur through infected blood, shared needles, organ transplantation, or pregnancy.

Can malaria go away without treatment?

Symptoms may briefly ease, but the infection can remain and become severe or return later. Confirmed or suspected malaria needs prompt medical treatment. Do not wait for the fever to settle on its own.

How long after travel can malaria symptoms start?

Symptoms often begin within weeks, but they can appear months or occasionally longer after exposure. The timing differs by parasite species and whether preventive medicine was taken. Always mention relevant travel when seeking help for a fever.

Can malaria come back after treatment?

Yes. P. vivax and P. ovale can remain inactive in the liver and later cause a relapse unless those liver stages are treated. Malaria may also return if treatment did not fully clear the original infection.

Can I get malaria more than once?

Yes. A previous infection does not give dependable lifelong immunity. People who have had malaria still need preventive medicine and mosquito protection for future travel to risk areas.

Does taking malaria prevention mean I cannot get malaria?

No preventive medicine is completely effective. Correct use lowers the risk substantially, but a fever during or after travel still requires urgent malaria testing.

Sources

- World Health Organization. Malaria fact sheet
- World Health Organization. WHO guidelines for malaria
- US Centers for Disease Control and Prevention. About Malaria
- US Centers for Disease Control and Prevention. Clinical Testing and Diagnosis for Malaria
- US Centers for Disease Control and Prevention. Treatment of Malaria
- US Centers for Disease Control and Prevention. Yellow Book: Malaria
- UK Health Security Agency. Malaria prevention guidelines for travellers from the UK