

What is malaria?

Malaria is a serious disease that spreads when you're bitten by a mosquito infected by tiny parasites. When it bites, the mosquito injects malaria parasites into your bloodstream. Malaria is caused by the parasites, not by a virus or by a type of bacterium.

If it isn't treated, malaria can cause severe health problems such as seizures, brain damage, trouble breathing, [organ failure](#) and death.

The disease is rare in the U.S., with about 2,000 cases per year. If you're traveling to an area where malaria is common, talk to your healthcare provider about ways you can prevent being infected. People who are infected and travel to the U.S. can spread the disease if a mosquito bites them and then bites someone else.

How common is malaria?

Malaria is common in tropical areas where it's hot and humid. In 2020, there were 241 million reported cases of malaria throughout the world, with 627,000 deaths due to malaria. The majority of these cases occur in Africa and South Asia.

Where does malaria usually occur?

Malaria occurs all over the world and happens most often in developing countries and areas with warm temperatures and high humidity, including:

- Africa.
- Central and South America.
- Dominican Republic, Haiti and other areas in the Caribbean.
- Eastern Europe.
- South and Southeast Asia.
- Islands in the Central and South Pacific Ocean (Oceania).

Who might get malaria?

Anyone can get malaria, but people who live in Africa have a higher risk of infection than others. Young children, older people and those who are pregnant have an increased risk of dying from malaria. People who live in poverty and don't have access to healthcare are more likely to have complications from the disease.

More than 90% of malaria deaths occur in Africa, and nearly all of the people who die are young children. More than 80% of malaria deaths in the region in 2020 involved children under the age of 5 years old.

Symptoms and Causes

What causes malaria?

When a mosquito bites someone who has malaria, the mosquito becomes infected. When that mosquito bites someone else, it transfers a parasite to the other person's bloodstream. There, the parasites multiply. There are five types of malaria parasites that can infect humans.

In rare cases, people who are pregnant and who have malaria can transfer the disease to their children before or during birth.

It's possible, but unlikely, for malaria to be passed through blood transfusions, organ donations and hypodermic needles.

What are the signs and symptoms of malaria?

Signs and symptoms of malaria are similar to flu symptoms. They include:

- [Fever](#) and sweating.
- Chills that shake your whole body.
- [Headache](#) and muscle aches.
- [Fatigue](#).
- [Chest pain](#), breathing problems and [cough](#).
- [Diarrhea](#), [nausea and vomiting](#).

As malaria gets worse, it can cause [anemia](#) and [jaundice](#) (yellowing of the skin and whites of the eyes).

The most severe form of malaria, which may progress to a coma, is known as cerebral malaria. This type represents about 15% of deaths in children and nearly 20% of adult deaths.

When do symptoms begin if you're infected with malaria?

Malaria symptoms usually appear 10 days to one month after the person was infected. Depending on the type of parasite, symptoms can be mild. Some people don't feel sick for up to a year after the mosquito bite. Parasites can sometimes live in the body for several years without causing symptoms.

Some types of malaria, depending on the type of parasite, can occur again. The parasites are inactive in your liver and then are released into your bloodstream after years. The symptoms begin again when the parasites begin circulating.

Diagnosis and Tests

How is malaria diagnosed?

Your healthcare provider will examine you and ask about your symptoms and travel history. It's important to share information about the countries you've visited recently so that your provider can clearly understand your risk.

Your provider will take a sample of your blood and send it to a lab to see if you have malaria parasites. The blood test will tell your provider if you have malaria and will also identify the type of parasite that's causing your symptoms. Your provider will use this information to determine the right treatment.

Management and Treatment

How is malaria treated?

It's important to start treating malaria as soon as possible. Your provider will prescribe medications to kill the malaria parasite. Some parasites are resistant to malaria drugs.

Some drugs are given in combination with other drugs. The type of parasite will determine what type of medication you take and how long you take it.

Antimalarial drugs include:

- Artemisinin drugs (artemether and artesunate). The best treatment for *Plasmodium falciparum* malaria, if available, is artemisinin combination therapy.
- Atovaquone (Mepron®).
- Chloroquine. There are parasites that are resistant to this medication.
- Doxycycline (Doxy-100®, Monodox®, Oracea®).
- Mefloquine.
- Quinine.
- Primaquine.

Medications can cure you of malaria.

What are the side effects of medications to treat malaria?

Antimalarial drugs can cause side effects. Be sure to tell your provider about other medicines you're taking, since antimalarial drugs can interfere with them. Depending on the medication, side effects may include:

- Gastrointestinal (GI) issues such as nausea and diarrhea.
- Headaches.
- Increased sensitivity to sunlight.
- [Insomnia](#) and disturbing dreams.

- Psychological disorders and vision problems.
- Ringing in the ears ([tinnitus](#)).
- Seizures.
- Anemia.

Prevention

Can I prevent malaria?

If you plan on living temporarily in or traveling to an area where malaria is common, talk to your provider about taking medications to prevent malaria. You will need to take the drugs before, during and after your stay. Medications can greatly reduce the chances of getting malaria. These drugs can't be used for treatment if you do develop malaria despite taking them.

You should also take precautions to avoid mosquito bites. To lower your chances of getting malaria, you should:

- Apply mosquito repellent with DEET (diethyltoluamide) to exposed skin.
- Drape mosquito netting over beds.
- Put screens on windows and doors.
- Treat clothing, mosquito nets, tents, sleeping bags and other fabrics with an insect repellent called permethrin.
- Wear long pants and long sleeves to cover your skin.

Is there a vaccine against malaria?

There's a vaccine for children which was developed and tested in Ghana, Kenya and Malawi in a pilot program. The RTS, S/AS01 vaccine is effective against *Plasmodium falciparum* malaria, which causes severe disease in children.

Other programs are working to develop a malaria vaccine.

Outlook / Prognosis

What is the outlook for people who have malaria?

If malaria isn't treated properly, it can cause serious health problems, including permanent organ damage and death. It's essential to seek treatment right away if you think you have malaria or have visited an area where it is common. Treatment is much more effective when it's started early.

The right medication and correct dose can treat malaria and clear the infection from your body. If you've had malaria before, you can get it again if an infected mosquito bites you.