

Malaria

Malaria is a serious and sometimes life-threatening infection spread through the bite of mosquitoes in many tropical and sub-tropical countries. Malaria can be prevented by avoiding mosquito bites and taking certain medications. People planning to visit malaria-affected countries should get advice from their GP or a travel clinic 4-6 weeks before they leave.

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What is the disease?

Malaria is an infection of the liver and red blood cells caused by microscopic parasites. There are five types of parasites that cause malaria: *Plasmodium ovale*, *P. malariae*, *P. knowlesi*, *P. vivax* and *P. falciparum*. Malaria parasites are spread through the bite of certain mosquitoes. Mainland Australia is free of malaria, but malaria is occasionally present in the Torres Strait Islands. Australians can contract malaria while travelling in tropical and subtropical areas of Asia, Africa, Central and South America, the Pacific Islands and parts of the Middle East. Currently, approximately 500 cases of malaria are diagnosed in Australia each year - almost all are in people who have travelled to malaria-affected countries and didn't take anti-malarial medications.

What are the symptoms?

Symptoms of malaria include sudden fever, chills, headache, sweating, nausea, vomiting and pain in joints and muscles. In severe cases symptoms can include seizures, confusion, kidney failure, breathing difficulty and coma. The infection is sometimes fatal. Malaria caused by the *Plasmodium falciparum* parasite can be especially dangerous. Malaria symptoms usually develop 9-14 days after being bitten by an infected mosquito. Occasionally symptoms develop weeks or months later.

Some types of malaria can re-occur months or years after exposure.

How is it spread?

Malaria is spread through the bite of the female *Anopheles* mosquito. The malaria parasites live inside the gut and salivary glands of an infected mosquito. When a person is bitten by an infected mosquito, the parasites are injected into the person's blood. The parasites then infect the liver and blood cells. When a mosquito bites a person with malaria, the mosquito may become infected and can then spread the disease.

In rare cases, malaria can also be spread from person to person through blood transfusion, sharing injecting equipment, and from mother to foetus.

Who is at risk?

Any person who lives in or travels to a country where malaria is present is at risk of contracting the disease. The risk is usually higher in rural areas than in cities. Those at increased risk include:

- **Pregnant women:** Malaria can be more severe in pregnant women. Malaria can also increase the risk of miscarriage, premature labour and stillbirth.

- **Young children:** Children of any age can get malaria. When children get malaria, the disease can progress very rapidly. Malaria can be more severe in children, especially those aged under 5. Pregnant women and young children are sometimes advised not to travel to malaria-affected areas if the risk is especially high.
- **People visiting friends and relatives overseas:** People returning to malaria-affected areas to visit friends and relatives are often at high risk of getting malaria. This is because immunity against the malaria parasite wanes quickly, and people visiting friends and relatives in malaria-affected areas may not be aware that they need to avoid mosquitoes.

How is it prevented?

Overseas travellers can prevent malaria by avoiding mosquito bites and taking preventive antimalarial drugs that kill the parasite.

Four to six weeks before travelling overseas, visit a GP or a travel health clinic for specific advice about avoiding malaria based on your itinerary and medical history.

Depending on the risk of malaria in the areas you are visiting, you may be advised to take drugs to prevent malaria. The choice of antimalarial depends on a range of factors including the drug resistance patterns of malaria in the areas you will visit.

It is important to take antimalarials exactly as advised by your doctor. All antimalarials need to be taken before, during and after you travel. Some need to be started several weeks before you travel. It is also very important to continue taking antimalarials as directed after you leave the affected area. Sometimes this means taking antimalarials for up to 4 weeks after you leave.

No antimalarial drug is 100% effective. Travellers taking antimalarial drugs still need to protect themselves from mosquito bites. Mosquitoes can carry other diseases too - another reason to avoid being bitten.

To protect against mosquitoes and reduce the risk of diseases they transmit:

- Cover-up with a loose-fitting long sleeved shirt and long pants when outside
- Apply mosquito repellent to exposed skin
- Take special care during peak mosquito biting hours. The mosquitoes that transmit malaria are most a twilight hours (dawn and dusk) and into the evening
- Stay and sleep in screened or air-conditioned rooms
- Use a bed net if the area where you are sleeping is exposed to the outdoors. Nets are most effective when they are treated with a pyrethroid insecticide, such as permethrin. Pre-treated bed nets can be purchased before travelling, or nets can be treated after purchase
- Avoid known areas of high mosquito-borne disease transmission or outbreaks.

For more detailed information on reducing the risk of mosquito bites at home and while travelling see the [Mosquitoes are a Health Hazard](#) factsheet. This also includes more information on mosquito repellents.

See the [Staying healthy when travelling overseas](#) factsheet for further information on travel. The Smartraveller website also has health information for specific destinations.

How is it diagnosed?

Malaria is diagnosed by special blood tests that detect malaria parasites. It is important that your doctor knows about your travel history and symptoms so the right blood test can be ordered.

How is it treated?

If you become ill with symptoms of malaria while overseas or after travelling, visit a GP or hospital emergency department **as soon as possible**. Tell the doctor where you have travelled, as this will help to make the right diagnosis. If you are travelling to a remote area where you know it will be difficult to access medical care, you may need to be prepared to treat yourself for malaria if you get symptoms (as well as taking drugs to prevent malaria). Speak to your doctor about this before you travel.

What is the public health response?

Laboratories are required to notify cases of malaria on diagnosis to the local public health unit.

Further Information

For more information about malaria and other travel health topics, refer to the US Centers for Disease Control and Prevention Travelers' Health site - <http://wwwnc.cdc.gov/travel/>
See full [Contact details for Public Health Units](#).

For further information please call your local Public Health Unit on 1300 066 055 or visit the New South Wales Health website www.health.nsw.gov.au