

Malaria



Malaria is caused by a parasite called *Plasmodium*. There are 5 species of *Plasmodium* which infect humans:

- > *Plasmodium vivax*
- > *Plasmodium falciparum*
- > *Plasmodium malariae*
- > *Plasmodium ovale*
- > *Plasmodium knowlesi* which is less common.

Of these, *Plasmodium falciparum* infection is the most severe and can cause death in up to 10% of cases. It can be rapidly fatal. Pregnant women and children are especially at risk. Other types of malaria are less severe, but still may cause death.



Malaria is a notifiable condition¹

How malaria is spread

The parasite is transmitted to humans by the bite of infected female *Anopheles* species mosquitoes.

The parasites multiply in the liver and the bloodstream of the infected person. The parasite may be taken up by another mosquito when it bites an infected person. The mosquito is then infected for the duration of its life and can infect other humans when it bites them.

Occasionally malaria is transmitted by blood transfusion. For this reason, people who have travelled to countries where malaria occurs may be deferred from giving blood for a short period. Malaria can also be transmitted from a mother to her fetus.

Malaria occurs in most tropical and sub-tropical areas of the world, including:

- > Africa
- > Central and South America
- > Asia (including southeast Asia)
- > Papua New Guinea
- > western Pacific islands.

Over 600,000 people living in these countries die from malaria each year. Many thousands of tourists also get malaria during their travels to countries where malaria is present. Tourists often get severe illness because they have had no previous exposure to malaria and have no resistance to the disease.

Signs and symptoms

Symptoms of malaria may include:

- > fever, which may come and go, or may be constant
- > chills
- > profuse sweating
- > malaise (feeling of unwellness)
- > muscle and joint pain
- > headache
- > confusion
- > nausea
- > loss of appetite
- > diarrhoea
- > abdominal pain
- > cough
- > anaemia.

Plasmodium falciparum may cause cerebral malaria, a serious complication resulting from inflammation of the brain that may cause coma.



Diagnosis

Diagnosis is made by a blood test – sometimes it is necessary to repeat the test a number of times, as the parasites can be difficult to detect.

Incubation period

(time between becoming infected and developing symptoms)

Varies with the type:

- > *P. falciparum*: 9 to 14 days
- > *P. vivax*: 12 to 18 days but some strains may have an incubation period of 8 to 10 months or longer
- > *P. ovale*: 12 to 18 days
- > *P. malariae*: 18 to 40 days
- > *P. knowlesi*: 9 to 12 days.

These periods are approximate and may be longer if the person has been taking drugs taken to prevent infection.

Infectious period

(time during which an infected person can infect others)

Direct person-to-person spread does not occur.

A person remains infectious to mosquitoes as long as the parasites are present in the blood. This may be several years if adequate treatment is not given. Parasites disappear from the blood within a few days of commencing appropriate treatment. Mosquitoes remain infected for life.

Treatment

Specific antimalarial treatment is available and must always be started as soon as malaria is diagnosed. There is increasing resistance to currently available drugs and treatment should be carried out by an infectious diseases specialist or other expert in the field.

Prevention

- > Exclusion from childcare, preschool, school or work is not necessary but cases should avoid being bitten by mosquitoes while they are unwell. Travellers to areas with malaria are usually advised to take preventative anti-malarial drugs.
- > There is no vaccine to prevent human infection by this parasite.
- > Personal protection and the environmental management of mosquitoes are important in preventing illness.

Travel in countries where there is malaria

Extensive international programs are undertaken in malarious countries to try to control this disease. For travellers, the following advice is given:

- > See a travel medicine expert before you go to get specific advice for the places you will be visiting.
- > Always take malaria prophylaxis drugs exactly as prescribed and take the full course. Be aware of their potential side effects.
- > Protect yourself from mosquito bites. Travel medical centres have good information on how to do this.
- > Be aware that no preventive measures are 100% effective, so always seek medical attention immediately if you develop a fever while travelling in, or after return from, a country where malaria occurs.
- > Always give your doctor the information about your travel if you become sick.



Useful links

Fight the Bite website –

www.sahealth.sa.gov.au/fightthebite

> Avoiding mosquito bites

SA Health website – www.sahealth.sa.gov.au

> Barmah Forest virus infection

> Chikungunya virus infection

> Dengue fever

> Japanese encephalitis

> Kunjin/West Nile virus infection

> Murray Valley encephalitis

> Protecting yourself and your health whilst travelling overseas

> Ross River virus infection

> Yellow fever

> When you have a notifiable condition

1 In South Australia the law requires doctors and laboratories to report some infections or diseases to SA Health. These infections or diseases are commonly referred to as 'n

You've Got What? 5th Edition

Communicable Disease Control Branch

Telephone: 1300 232 272 Email: HealthCommunicableDiseases@sa.gov.au

The SA Health Disclaimer for this resource is located at www.sahealth.sa.gov.au/youvegotwhat



This document has been reviewed and endorsed by SQCAG* for consumers and the community FEBRUARY 2016.

Public-I3-A1

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*SA Health Safety and Quality Community Advisory Group



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