

# Malaria

## Causative agent

Malaria is a serious and sometimes fatal disease caused by a group of malaria parasites, namely *Plasmodium falciparum*, *Plasmodium malariae*, *Plasmodium ovale*, *Plasmodium vivax* and *Plasmodium knowlesi*. It is commonly found in many parts of tropical and sub-tropical areas where the climate is warm, like Africa, South-East Asia and South America.

## Clinical features

Symptoms of malaria include fever, chills, headache, muscle pain and fatigue, cough, vomiting, diarrhoea and abdominal pain. Complications include anaemia, generalised convulsion, circulatory collapse, organ failure (such as kidney failure) and coma. If the disease is not treated promptly, it can lead to death.

## Mode of transmission

Malaria is a vector-borne communicable disease transmitted by an infected female Anopheline mosquito. When the mosquito bites a malaria patient, the mosquito becomes infected and will pass on the disease when it bites another person. Malaria is not transmitted from person to person. However, malaria can be transmitted through contaminated blood or blood product transfusion, organ transplant, or shared needles or syringes. Malaria may also be transmitted from a mother to her foetus/newborn baby before or during delivery.

## Incubation period

The incubation period varies with different species of *Plasmodium*. This usually ranges from 7 to 30 days but may be up to months or even longer after the bite of an infected Anopheline mosquito.

## Management

There are effective drugs against malaria but early diagnosis and prompt treatment are crucial. The doctor would prescribe a course of anti-malarial drugs with other supportive measures. The patient should complete the whole course of medication to ensure clearance of the malaria parasites.

## Prevention

### Prevention of mosquito bites

1. Wear loose, light-coloured, long-sleeved tops and trousers.
2. Use DEET-containing insect repellent on exposed parts of the body and clothing.
  - Pregnant women and children of 6 months or older can use DEET-containing insect repellent. In general, use DEET of up to 30% for pregnant women and up to 10% for children. For children who travel to countries or areas where mosquito-borne diseases are endemic or epidemic and where exposure is likely, children aged 2 months or above can use DEET-containing insect repellents with a concentration of DEET up to 30%
3. Take additional preventive measures when engaging in outdoor activities:
  - Avoid using fragrant cosmetics or skin care products
  - Re-apply insect repellents according to instructions

### Prevention of mosquito proliferation

1. Prevent accumulation of stagnant water
  - Change the water in vases once a week
  - Avoid using saucers underneath flower pots
  - Cover water containers tightly
  - Ensure air-conditioner drip trays are free of stagnant water
  - Put all used cans and bottles into covered dustbins

2. Control vectors and reservoir of the diseases
  - Store food and dispose of garbage properly

For more information about control and prevention of mosquito breeding, please visit the website of the Food and Environmental Hygiene Department (FEHD) at [https://www.fehd.gov.hk/english/pestcontrol/handbook\\_prev\\_mos\\_breeding.html](https://www.fehd.gov.hk/english/pestcontrol/handbook_prev_mos_breeding.html)

### Advice for travellers

1. Take measures to avoid mosquito bites. For details about the use of insect repellents and the key points to be observed, please refer to 'Tips for using insect repellents'. (<https://www.chp.gov.hk/en/features/38927.html>).
2. If you travel to areas where malaria is common, arrange a consultation with a doctor at least 6 weeks before the trip for preventive measures and obtain anti-malarial drugs for prophylaxis if necessary. The prescription of anti-malarial medication depends on several factors including but not limited to the itinerary, time of travel, types of activity and past medical history of the traveller. If you decide to take such medication, you should start taking the drugs before the trip, continue throughout the journey and until some time after leaving the area according to the instruction of the doctor.

3. If travelling in endemic rural areas, carry a portable bed net and apply permethrin (an insecticide) on it. Permethrin should NOT be applied to the skin. Seek medical attention promptly if feeling unwell.
4. For vaccines against malaria, the World Health Organization advises only children in malaria-endemic regions to receive the vaccination but not adults. The vaccine is also not applicable for travellers going to these malaria-endemic regions; they should use chemoprophylaxis and vector control methods to prevent malaria. As such, strict environmental hygiene, mosquito control and personal protective measures remain the most effective means against malaria both locally and during travel.
5. Malaria infection during pregnancy can have adverse effects on both the mother and the foetus. Therefore, pregnant women should not visit malaria-endemic areas unless it is absolutely necessary.
6. If you have symptoms of malaria during your visit abroad or after coming back to Hong Kong, seek medical advice immediately and provide travel details to the doctor. Urgent blood tests may be performed and prompt treatment is vital.



Centre for Health Protection Website [www.chp.gov.hk](http://www.chp.gov.hk)

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