



Preventing Malaria

疟疾的预防措施

The 's of Health



Changi
General Hospital

Malaria is the world's most prevalent parasitic disease, accounting for an estimated 216 million cases with 655,000 deaths annually. Many people acquire malaria during travel to tropical and subtropical countries. Malaria occurs in most parts of sub-Saharan Africa, South and Southeast Asia, Mexico, Haiti, Central and South America, Papua New Guinea and the Solomon Islands.



The risk of acquiring malaria for travellers depends mainly on:

- specific risk behaviour (eg. rural travel, night-time exposure, unscreened accommodation)
- travel to areas with drug-resistant malaria
- time of travel (high or low transmission season)

Young children, pregnant women, immunosuppressed and elderly travellers are particularly at risk of severe malaria.



NOTE: Cities in Africa, India and Pakistan are not malaria free. Malaria transmission is rare at altitudes above 2000 meters.

Symptoms of Malaria

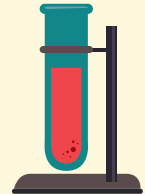
Malaria is a disease that occurs when an infected female *Anopheles* mosquito bites a person and injects malaria parasites into the blood. Four species of malaria parasites can infect humans (*Plasmodium falciparum*, *P. vivax*, *P. ovale* and *P. malariae*). *Plasmodium falciparum* infection can result in rapid progression to life-threatening illness. About 1 to 2% of patients infected with *falciparum* malaria die.

Symptoms of malaria are flu-like and may include fever, chills, sweats, muscle aches, headache and sometimes



vomiting and diarrhoea. Patients with falciparum malaria may develop renal failure, convulsions and coma. Infections with *P. vivax* and *P. ovale* may remain in the liver for many months, causing a reappearance of symptoms months or even years later.

The period between a mosquito bite and the onset of symptoms of malaria is usually 7 to 21 days but this interval may be longer when the traveller has taken incomplete or inadequate malaria prevention measures.



If a traveller develops fever during or after travel to malarious areas, medical help must be sought immediately to exclude malaria as a cause. A blood sample should be checked for malaria parasites.

Protection against Malaria

Travellers can protect themselves by using anti-mosquito measures and taking drugs to prevent malaria.

1. Preventing mosquito bites

Any measures that reduces the exposure to the evening and night-time feeding female *Anopheles* mosquito is the best way to prevent infection.

Measures to avoid mosquito bites include:

- Use long-sleeved clothing and long pants (preferably light coloured) if you are outdoors at night.
- Apply insect repellent 30 to 50% DEET (N, N-diethyl-m-toluade) to exposed skin.
- Use mosquito net over the bed if your bedroom is not air-conditioned or screened. For additional protection, treat the mosquito net with the insecticide permethrin.
- Spray permethrin or a similar insecticide or light a mosquito coil which gives out pyrethrum in the living or sleeping areas.



2. Using antimalarial drugs

Travellers to areas where malaria occurs should consult their doctor before departure. Drugs to prevent malaria are usually prescribed for travellers to malarious areas. An exact itinerary is necessary to decide the degree of protection required.



The common drugs recommended for the prevention of malaria in travellers include:

- Mefloquine
- Doxycycline
- Chloroquine
- Atovaquone / Proguanil (Malarone)

Strict adherence to the recommended doses and schedule of the antimalarial drug prescribed is necessary for effective protection.

- Take the tablet at the same day each week or at the same time each day.
- Take tablets after meals.
- Take the recommended doses 1 to 2 weeks before travel (for mefloquine and chloroquine), throughout the trip and for 4 weeks after leaving the malarious area. Malarone is started one day before travel, throughout the trip and for seven days after leaving the malarious area.
- Do not stop the tablets after arriving home as it is essential to complete the full duration.

Side effects of antimalarial drugs

All medicines have side effects. Mild nausea, occasional vomiting and giddiness are not adequate reasons for stopping the antimalarial drug. The seriousness of malaria warrants tolerating temporary side effects. However, if serious side effects occurs, the traveller should seek medical help and stop taking the antimalarial drug.



NOTE : No antimalarial drug is 100% protective. Personal protective measures have to be observed.

疟疾是世界上很普遍的寄生虫疾病。根据估计每年有216万病例，其中的6.55万的病人死亡，多数人是在热带和亚热带国家旅行时传染到疟疾。疟疾多数出现在非洲的撒哈拉部分区域，南亚及东南亚区域，墨西哥，海地，中美洲和南美洲各国，巴布亚新几内亚和所罗门岛等区域。



儿童、孕妇、老人和免疫受抑制的旅客更易感染严重的疟疾。

造成旅客被传染到疟疾的危险因素主要有：

- 危险举止与行为，如在疟疾感染区域做野地旅行，夜间暴露于户外，无帐幕掩蔽的膳宿等
- 去有抗药性疟疾传染的地区旅行
- 旅行的时间（高发或低发传染病季节）



备注：非洲，印度和巴基斯坦的城市不属疟疾免疫区。疟疾在海拔两千米以上的高度的传染非常少见。

疟疾的症状

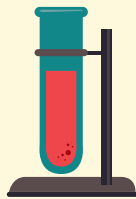
疟疾的传染是由被感染到疟疾的斑蚊叮到人体时，把寄生虫注入血液中，人因此而感染疟疾。共有四种疟疾病原（镰状疟原虫）会把寄生虫传染给人类。感染到镰状疟原虫可能迅速导致生命受到威胁。大约有百分之1至2的病人感染到这种恶性病毒而导致死亡。

疟疾的最初病状像感冒，并可能发烧、惧寒、冒汗、肌肉疼痛，头痛和有时甚至会呕吐或腹泻。病人被感染到镰状疟原虫恶性病毒可能导致肾脏衰竭，惊厥和昏迷不醒。被感染到慢性的疟原虫病毒（P. Vivax and P. Ovale）可能在人体的肝脏潜伏数月保持在睡眠状态甚至一年之久才出现其症状。



一般人被斑蚊叮过后的7至21天之内会出现症状，不过，如果预防措施不完整或不适当，那么病发周期可能会延长。

如果旅客刚好在疟疾感染区内旅游时或旅游后发烧，那么应该马上看医生给予治疗，抽取血液样本化验，检验血液中是否有疟原虫寄生，才能确定是否感染到疟疾。



预防感染疟疾

旅客可以做些预防措施比如使用防蚊措施或服食预防疟疾药剂来避免感染疾病。

1. 如何避免被斑蚊叮到

最佳的预防感染方法是无论在任何情况下，尽量不要暴露身体，尤其是黄昏和夜间，雌性的班蚊最活跃的时段。

预防被蚊子叮着的方法包括：

- 晚上在户外活动时，应该选择穿着浅颜色的长袖上衣长裤。
- 暴露体外的肌肤涂上昆虫防护剂，需包含30至50%的甲苯二乙基（DEET）的容量才有保护作用。（N, N-diethyl-m-toluade）。
- 如果卧房内没有冷气或掩护的设备，睡觉时就需要有覆盖蚊帐。在蚊帐上喷射杀虫剂更能加强保护作用。
- 在屋内或卧室内喷射灭蚊剂或类似的除虫剂，或者点燃可释放驱蚊剂的蚊香。



2. 使用抗疟剂

在出发去疟疾感染区域（至少两个礼拜）之前，旅客应该请教他们的家庭医生，做好防备。医生通常会开预防疟疾的处方给去疟疾感染区域的旅客，旅客需要准备好精确的行程表以方便（医生）决定需要预防的程度。

旅客们最常使用的抗疟剂包括：

- 甲氟喹 (Mefloquine)
- 脱氧土霉素 (Doxycycline)
- 氯喹 (Chloroquine)
- 阿托伐醌氯胍 / 马拉隆 Atovaquone / Proguanil (Malarone)



旅客必须遵照处方严格按时按量服药，才能获得有效的保护。

- 每个星期同一天服药或每天同一个时段服药。
- 餐后才服药
- 以下是不同抗疟剂的使用说明：

甲氟喹 (Mefloquine) 和氯喹 (Chloroquine) 需在旅行前1至2个星期开始服用。每个星期同一天服用一次，直到离开疟疾疫区4个星期后才停止服用。

阿托伐醌氯胍 / 马拉隆 Atovaquone / Proguanil (Malarone) 需在旅行前1至2天开始服用，直到离开疟疾疫区7天后才停止服用。

- 旅行结束回家后也不可停止服食药剂，必需把全部疗程服完。



抗疟剂的副作用

所有的抗疟剂都有一些副作用，少许的反胃，偶尔会呕吐和有点头晕，这些都不是停止服食抗疟剂的适当因素。抗疟剂副作用的程度一般都是暂时性的，而且是身体所能承担的。但是，如果出现严重的副作用，旅客应及时求医治疗和停止服用此药。



备注：到目前为止，还没有一种抗疟剂是100%的有效。应该注意个人的预防措施和预防尺度。

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