

Advice on Prevention and Control of Malaria Vector (*Anopheles*)

Malaria

Malaria is a mosquito-borne disease very popular in South-east Asia. The pathogen of malaria, characterised by a group of parasites, may be brought into Hong Kong by infected travellers. The disease is transmitted through mosquito bites of *Anopheles* species.

Clinical features

Symptoms like intermittent fever, chills and sweating are usually present. In typical cases, the fever comes, then subsides for 1 – 2 days and then comes back again in a cyclical pattern. There may also be headache, tiredness, poor appetite and muscle pain. Complications of the disease include anaemia, liver, kidney and brain damage. In some extreme cases, the disease can be fatal.

Vectors

Malaria transmission in Hong Kong is mainly by *Anopheles minimus* and *Anopheles jeyporiensis*. *Anopheles minimus* breeds in unpolluted hilly streams where water flow is impeded by marginal vegetation, while *Anopheles jeyporiensis* is found in flooded grass fields, particularly abundant in rice fields and irrigation ditches. Both vectors bite actively at midnight (11 pm to 2 am) and their flight range can even reach two kilometres. Since transmission can happen at a very low vector density, control of vector breeding is vital.

Preventive measures

1. Source reduction / Environmental management

- Any installation of water pipes / water storage devices in hilly streams should be avoided;
- Any installation / construction of water gates in hilly streams should be avoided;
- Drainage systems / devices should be installed in water-logged fields such as paddy fields, to ensure continuous water flow or regular removal of stagnant water;
- Water gates should be opened completely every week to prevent vector breeding in stagnant water; and
- Disposal / dumping of any articles into hilly streams should be avoided.

2. Larviciding

- Larvicide such as temephos and B.t.i. (*Bacillus thuringiensis israelensis*) should be applied according to the instructions on the label to any breeding places that cannot be eliminated in a week's time; and
- For large areas such as water ponds, larvivorous fishes or shrimps may be bred as a measure of biological control.

3. Personal protection

- Mosquito screens should be installed at windows / louvers (30 – 40 meshes per square cm);
- Mosquito nets should be used in the bedrooms when necessary;
- Long-sleeved clothes and long trousers should be worn during outdoor activities at night;
- Repellent containing 10% – 30% concentration of DEET (*N*, *N*-diethyl-*meta*-toluamide) should be applied to the clothes or skin according to label instructions during outdoor activities at night; and
- Camp sites should be located at a high latitude in a downwind area of 0.8 – 1.6 kilometres radius apart from the nearest streams or water-logged fields. If this is not the case, protective measures against mosquitoes should be taken.

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