

Malaria is a disease caused by the Plasmodium genus, parasites inoculated into humans through the bite of the anopheles mosquito which picks them up during a blood meal off other infected people; it is the most important parasitic disease and the second infectious disease in the world for risk of illness and mortality after tuberculosis, with 500 million new clinical cases per year (with 90% in tropical Africa) and 1 million deaths per year.

Malaria can be prevented through behavioural prophylaxis and, when indicated, chemoprophylaxis.

BEHAVIOURAL PROPHYLAXIS

Due to the evening and night activity of the anopheles mosquito, the risk of malaria transmission occurs mainly in the hours between dusk and dawn. Therefore, to protect oneself against mosquito bites, it is recommended to avoid going out at this time if possible. The following are some other guidelines to follow:

- **Wear light-coloured clothing** (dark or bright colours attract insects), with long sleeves and trousers and thick socks; apply DEET or KBR-based repellent on exposed skin, evaluating the suitable concentration and the duration of the application (on average 3-4 hours), and repeating the application if necessary, for example, in the case of intense perspiration; preferably, stay in well-constructed buildings that are in a good state of preservation;
- Preferably **sleep** in rooms equipped with air conditioners making sure that doors and windows are securely closed; alternatively, sleep in rooms fitted with undamaged insect screens in the windows;
- **Use fans**, where possible, in confined environments (they reduce the movement of mosquitoes on the skin).
- **Use mosquito nets over the bed**, tucking the edges under the mattress, checking their condition and ensuring that no mosquito has remained inside. It is very useful to spray mosquito nets with insecticides based on permethrin;
- **Spray insecticides** derived from pyrethrum in living rooms and in bedrooms or use electric plug-in insect repellents with tablets (remember to replace the depleted tablets) or liquid-based (electrically or battery-operated) containing pyrethroids. They should be used with an open window and their protective action only begins 30-45 minutes after switching them on. Fumigation spirals (mosquito repellents) are also useful but only in the outdoors.

Repellent products for insects and insecticides based on pyrethroids can even be sprayed directly onto clothing. The possibility, especially in young children, of adverse reactions to insect repellent products requires scrupulous attention to the instructions for use which accompany such products.

The repellent should not be inhaled or ingested or brought into contact with the eyes; it should not be applied to irritated or damaged skin; the application of highly-concentrated products should be avoided in children; treated skin surfaces should be washed after returning indoors or on the occurrence of suspicious symptoms, in which case a doctor should be consulted as soon as possible.

AGE	DEET (N,N-Diethyl-meta-toluamide)	KBR (Icaridin)	CITRODIOL (PMD)	IR3535 (AMP)
Less than 3 years	Do not use, physical barriers only are preferred (mosquito nets)			
From 3 to 12 years *	Only use products with a concentration lower than 20% of the active substance; do not exceed 2 applications in 24 hours		Only use products with a concentration of less than or equal to 20%. Maximum 2-3 applications in 24 hours	
Over 12 years	Products containing up to 30% of active substance can be used only once in 24 hours	Products containing up to 35% of active substance can be used only once in 24 hours	Products containing up to 40% of active substance can be used for a maximum number of 2 applications in 24 hours	
Pregnancy and breast-feeding	Do not apply during pregnancy and breast-feeding (precautionary principle).		Only use products with a concentration of less than or equal to 20%. Avoid more than 1 application in 24 hours	

* Remember that the application of the repellent on children under 12 years of age should be administered by an adult to prevent it from coming into contact with the eyes, either directly or through the hands of the child.

Behavioural prophylaxis must always be used in all the areas where malaria is endemic, along with the awareness of being exposed to the risk and, therefore, with the need to carry out a test within 24 hours for the detection of the parasite in the event of fever higher than 37.5°.

In some cases, behavioural prophylaxis and awareness may constitute the only preventive measures in case of stays of a short duration (less than a week).

ANTI-MALARIAL CHEMOPROPHYLAXIS

Currently there is no drug that can guarantee absolute protection and a complete lack of side effects. Sometimes, taking an antimalarial drug may induce, in fact, a false certainty of protection that may lead to neglecting the administration of the behavioural prophylaxis and to underestimate any malaria symptoms, resulting in delayed diagnosis of the disease. Chemoprophylaxis should, therefore, only be taken when necessary. Consider that even in countries where malaria is present, the large urban centres and international tourist resorts are often exempt, as are areas over 2,000 metres in altitude and those below 16° C temperature. The risk of infection may also vary according to the season.

Attention! The need for anti-malarial chemoprophylaxis will always be carefully assessed in the course of the pre-trip consultation

ATOVAQUONE AND PROGUANIL (MYLAN *GENERICS* – ADULT MALARONE)

- In a subject who weighs over 40 Kg

one tablet



Once daily at the same time

ATOVAQUONE + PROGUANIL is taken in one daily dose starting **1-2 days prior** to arrival in the malarial area, continuing during **all the days spent** in a malarial area and stopping **7 days after** leaving the malarial area.

ATOVAQUONE AND PROGUANIL PEDIATRIC USE (MALARONE BB paediatric)

- In a subject who weighs 31-40 Kg

three tablets



- In a subject who weighs 21-30 Kg

two tablets



- In a subject who weighs 11-20 Kg

one tablet



Once daily at the same time

ATOVAQUONE + PROGUANIL is taken in one daily dose starting **1-2 days prior** to arrival in the malarial area, continuing during **all the days spent** in a malarial area and stopping **7 days after** leaving the malarial area.

MEFLOQUINE (LARIAM):

- In a subject who weighs over 44 Kg

one tablet



- In a subject who weighs 31-43 Kg

three-quarters of a tablet



- In a subject who weighs 20-30 Kg

half a tablet



- In a subject who weighs 5-19 Kg

a quarter of a tablet



Once a week, always on the same day, to be ingested with plenty of water and a full stomach

MEFLOQUINE is taken in a single dose once a week starting one/two weeks prior to arrival in the malarial area, continuing during **all the weeks spent** in a malarial area and stopping **4 weeks** after leaving the malarial area.

DOXYCYCLINE (e.g. BASSADO , VIBRAMYCIN):

- In a subject over 14 years old

one tablet



- In children between 11-13 years old

three-quarters of a tablet



- Between 8-10 years old

half a tablet



- Under 8 years old

contraindicated

Once daily

Doxycycline is taken in one daily dose starting **1-2 days prior** to arrival in the malarial area, continuing during **all the days spent** in a malarial area and stopping **4 weeks** after leaving the malarial area.

CHLOROQUINE (e.g. CHLOROQUINE BAYER 30CPR RIV 250)

- In adult subjects 2 tablets (250 mg equal to 155 mg of chloroquine base)



- In children 5 mg. of chloroquine base per kg of body weight
(Corresponding to 1/3 tablet of 250 mg every 10 kg of weight)

Once a week, always on the same day, after a meal

CHLOROQUINE is taken once a week, starting **one week** prior to arrival in the malarial area, continuing for **all the weeks spent** in a malarial area and stopping **4 weeks** after leaving the malarial area.

Presumptive treatment of malaria

In the event that anti-malarial chemoprophylaxis has not been indicated or prescribed or not taken or you are staying in a low-risk area for this disease, it is recommended to take a pack of anti-malarial drugs (listed below) to be taken once daily for 3 consecutive days in case of fever (not investigated by a medical practitioner), only when it is not possible to test for malaria parasites through a blood test within 24 hours of the onset of fever.

DRUG	ADULT DOSAGE	DOSAGE FOR CHILDREN
DIHYDROARTEMISININ-PIPERAQUINE (EURARTESIM) 40 mg/320 mg	36-74 Kg: 3 tablets daily, equivalent to 9 tablets total 75-100 Kg: 4 tablets daily, equivalent to 12 tablets total	5 - 6 Kg: ¼ tablet 7 - 12 Kg: ½ tablet 13 - 24 Kg: 1 tablet 25 - 36 Kg: 2 tablets
ATOVAQUONE-PROGUANIL Adults 250 mg/100 mg (MYLAN <i>GENERICS</i> - MALARONE) Children 62.5 mg/25 mg (MALARONE BB paediatric)	4 tablets daily - equivalent to 12 tablets total	5 - 8 Kg: 2 Paediatric tablets 9-10 Kg: 3 Paediatric tablets 11-20 Kg: 1 adult tablet 21-30 Kg: 2 adult tablets 31-40 Kg: 3 adult tablets ≥ 41 Kg: 4 adult tablets
To be taken once daily for 3 consecutive days		

Finally remember!!! If a FEVER develops on your return from an overseas trip, even if this occurs months later, it is recommended that you inform your doctor of your journey, also specifying the destination and the period.