

# Malaria Symptoms and Treatment

## Malaria Symptoms:

Fever, chills, headache, nausea, vomiting, diarrhea, crankiness, fatigue and trouble sleeping are the classic signs of malaria. Often the symptoms are cyclic. For every person the symptoms are very different. Babies often only show crankiness and have lower fevers, so test if the baby has been cranky a couple of days. It is ok to wait 24-48 hours to see how the illness presents before testing. Often virus's mimic malaria, and resolve quickly. If the symptoms have not begun to resolve in 72 hours, **definitely test, or retest.**

## Places To Go to Check for Malaria:

Some expats in the community have **rapid malaria tests** in their homes. They can be purchased at the local apotiks like Dahsyat for around 60,000 IDR per test.

**HIS Clinic:** You may come to the clinic during regular hours and be tested with a rapid test. After hours contact any nurse directly about the possibility of being tested in their home.

**Ibu Ning:** Ibu Ning reads blood slides Monday-Friday, 3:00-5:00 at Komplek Mem/Pondok Kemuliaan. You can leave a blood slide for her anytime of the day; leave your HP number so they can sms you the results along with Rp 20,000 per blood slide.

**Apotik Kima Farma** is in Sentani. Heading out toward Hawaii. It is over the last bridge in town on the left and is newly remodeled with a blue and orange color scheme. The Lab is open after 7pm.

**Apotik Gratia** is in Sentani. On the main road, going toward Hawaii. On the right near Jl Pasir. Lab only open in the evenings.

**The hospital in Doyo Baru: Yowari:** During day time hours, they have a lab. In the evening you have to go to the Emergency room, where they have another lab set up for reading Malaria slides.

**The hospital in Waena – Dian Harapan,** is also a reliable place to get a blood slide checked. Their lab is open 24 hours.

**The hospital in Jayapura – Dok Dua,** can also do a malaria slide 24 hours a day. You have to ask for the slide to be urgently read in the emergency (UGD) department.

If in doubt of the test results (or testing is not available) start treatment and/or consult with a medical personal. Then if it becomes clear that it is not malaria, finish 3 days worth of the medicine you are using before stopping. This will prevent resistance.

## **Treatment:**

We believe that most, if not all malaria in Papua is now Chloroquine resistant. With that in mind, **always** take two drugs for malaria treatment (or a drug that has 2 combined in one). This will prevent development of resistance. If you attack the malaria on more than one front, then resistant parasites don't get a chance to grow and survive.

Your treatment will depend on what you take for prophylaxis and also the type of malaria you have.

Worldwide there are five types of malaria. There are two common kinds of malaria in Papua: Tersiana (vivax) Malaria and Tropika (falciparum) Malaria. While neither kind of malaria is safe, Tropika is considered more critical because it can cause an immune reaction in the blood due to the buffy coat factor on the red cells containing the parasite. The red blood cells get sticky and start making tiny clots. The blood gets sludgy, eventually making small pinpoint stroke like events at the capillary level. This causes poor thinking, hallucination, somnolence, etc. and is relatively obvious to care givers that are alert and looking for it. As the parasites are cleared from the blood, the immune reaction tends to fade, but takes days for the blood to begin to circulate properly again. This reaction occurs in the kidneys, heart, lungs, and other tissue as well. That is why severe malaria can mimic so many horrible diseases. Both kinds of malaria can be treated the same way with the exception that **Malarone, is not as effective against Tersiana.**

### **Rule of thumb on vomiting medicine:**

If the medicine is kept down for over 1 hour then it is most likely absorbed and you do not have to repeat the dosage. If you vomit 30 minutes to 1 hour after taking your medicine repeat half your dosage. If you vomit within 30 minutes, repeat the whole dosage.

To help you not vomit your medicine: take Antimo/Dimenhydrinate (follow package directions for dosing) 30 minutes before taking the malaria treatment medicine. Remember to drink plenty. Malaria (and Quinine) cause hypoglycemia (low blood sugar). Having a sweet drink can prevent this.

### **Fever:**

Acetaminophen (Panadol, Tylenol) is safer to take for a fever when you have malaria. Aspirin and Ibuprofen make your red blood cells fragile. If you have high fevers you may alternate taking Acetaminophen and Ibuprofen every two hours for a short time to control the fever.

### **Eradication (eliminate hidden forms of malaria from the blood):**

If you have Tersiana (p. vivax) then after finishing malaria treatment it is important to follow up with a dose of Primaquine to eliminate it from your liver.

Dose for adults: 30 mg a day for 2 weeks, Take with food.

Children: 0.5 mg/kg per day x 2 weeks, Take with food.

If you have dark colored urine, stop taking this medicine immediately. Do not take if you have G6PD deficiency, this medicine can cause severe anemia

## Malaria Treatment

Prophylaxis	<p><b>If you have :</b>  <b>Tersiana (P.Vivax) or Tropika (P. Falciparum)</b>  <b>Then takeY</b></p>
1. None	<ol style="list-style-type: none"> <li>1. Coartem or Aurother (has 2 drugs combined in 1: Artemether and Lumefantrine)</li> <li>2. Mefloquine + Doxy</li> <li>3. Kina (Quinine) + Doxy or Fansidar</li> <li>4. Artemether + Doxy or Fansidar</li> <li>5. *Malarone (has 2 drugs combined in 1: Atovaquone and proguanil)</li> </ol>
2. Chloroquine	<ol style="list-style-type: none"> <li>1. Coartem or Aurother</li> <li>1. Kina + Doxy or Fansidar</li> <li>2. Artemether + Doxy or Fansidar</li> <li>3. Mefloquine + Doxy</li> </ol>
3. Doxycycline (Doxy)	<ol style="list-style-type: none"> <li>1. Coartem or Aurother</li> <li>2. Artemether + Fansidar or Clindamycin</li> <li>3. Mefloquine + Fansidar</li> <li>4. Kina + Fansidar or Clindamycin</li> <li>5. *Malarone + Fansidar</li> </ol> <p>*not as effective against Tersiana</p>
4. Malarone	<ol style="list-style-type: none"> <li>1. Coartem or Aurother</li> <li>2. Mefloquine + Doxy</li> <li>3. Kina + Doxy or Fansidar</li> <li>4. Artemether + Doxy or Fansidar</li> </ol>
5. Mefloquine	<ol style="list-style-type: none"> <li>1. Coartem or Aurother</li> <li>2. Artemether + Doxy or Fansidar</li> <li>3. Kina* + Doxy or Fansidar</li> <li>4. Malarone + Fansidar</li> </ol>
6. Paludrine	<ol style="list-style-type: none"> <li>1. Coartem or Aurother</li> <li>2. Kina + Doxy or Fansidar</li> <li>3. Artemether + Doxy or Fansidar</li> <li>4. Mefloquine + Doxy or Fansidar</li> </ol>

**If on prophylaxis, do not use the same medicine to treat malaria.**

## Dosages and Recommendations

The following information is a list of the drugs to be used to treat malaria and their dosages. Use the above chart to know the combinations.

### Artesunate /Artemether (Artemesin derivatives):

Only take from a reliable source. You can check with the HIS clinic to see if we have any available. Novartis brand is available and locally made by a Swiss company. Arsuamoon is known to be counterfeit.

**Artemether dose:** Adults: follow directions. Children: 1.8mg/kg per day x 5 days. Double the first dose on day 1.

**Artesunate dose:** Adults: follow directions. Children: 2mg/kg per day X 5 days. Double the first dose on day 1.

### Chloroquine:

Should not be used to treat malaria. Use **only** if nothing else is available. Even then, add a second medicine.

### Clindamycin:

Do not take if allergy to **Erythromycin**. Safe for children and pregnancy.

For adults: 10mg/kg (maximum of 600mg) every 8 hours x 7 days.

For children: 10mg/kg every 8 hours x 7 days.

### Coartem or Aurother:

This is a two drug combination. Only need to take this one drug for malaria treatment.

If older than 16 years old and > 35 kg: Take 4 tablets at initial dose. Take 4 more tablets 8 hours later. Take 4 tablets in a.m. and p.m. for next 2 days.

Children between 25-35kg: Take 3 tablets at initial dose. Take 3 more tablets 8 hours later. Take 3 tablets in a.m. and p.m. for next 2 days.

Children between 15-25kg: Take 2 tablets at initial dose. Take 2 more tablets 8 hours later. Take 2 tablets in a.m. and p.m. for next 2 days.

Children between 5-15 kg: Take 1 tablets at initial dose. Take 1 more tablets 8 hours later. Take 1 tablets in a.m. and p.m. for next 2 days.

### Doxycycline:

For adults (not pregnant) and children over 10 years old.

100mg twice a day X 7 days.

### Fansidar:

This is a Sulfa drug. Do **NOT** take if allergic to Sulfa. It is only safe to take in 2<sup>nd</sup> trimester of pregnancy.

Adult dose: 3 tablets taken on second day of treatment.

Children 6 months and older: - 1 tablet/20 kg of body weight on second day.

**Kina (The Indonesian name for Quinine):**

Expect nausea, vomiting and upset tummy from this medicine. Prevent vomiting the medicine by following the advice above under "Rules of thumb about vomiting". Do not take within 24 hours of taking Chloroquine or Mefloquine.

Dose: 10 mg/kg (maximum of 600mg) every 8 hours x 4-5 days.

**Malarone:**

**For Tropika only.** DO NOT take with Rifampin, Tetracycline or Doxycycline, as it will affect the absorption of Malarone. Malarone is not for pregnant women.

The adult dosage: 4 tablets daily X 3 days.

For children: 11-20 kg, one tablet daily x 3 days.

21-30kg, two tablets daily x 3 days.

31-40kg, three tablets daily x 3 days.

**Mefloquin:**

DO NOT give within 24 hours of giving Chloroquine or Kina. Do not take if you have heart problems or depression or any family history of psychological illness.

Adult dosage: 5 tablets X 1 dose (each tablet is 250 mg).

For children 20-25mg per kg, x 1 single dose.

**If a blood slide or rapid test is positive within a month of completing a Malaria treatment, please contact the clinic. We need to review your case carefully and retreat with other medicines. Also, if you or your family member have a secondary infection (i.e. pneumonia or an ear infection) and another antibiotic is needed, please seek medical advice. As combining multiple drugs can be dangerous.**

**Pregnancy and Breastfeeding:**

Although some meds have known risks, the risk of severe health consequences of malaria to both mother and child quickly outweigh the small risk of toxicity from the meds. For that reason we always treat, but choose effective meds based on the specific conditions of mother and baby. Please feel free to discuss your case in detail with a nurse midwife, doctor or nurse. The staff at the HIS clinic are prepared to advise you.

Listed are some web sites on pregnancy and malaria that you will find helpful:

<http://www.malaria.com/overview/malaria-prevention>

<http://www.nhs.uk/Conditions/Malaria/Pages/Treatment.aspx>

<http://www.drugs.com/pregnancy/mefloquine.html>

And you can check out the CDC website. Do a search on "pregnancy and breastfeeding while treating malaria".

Thank you for serving in Indonesia! Our goal is that you will stay healthy, be informed, and know how to treat malaria wisely.

Dr. Di Matthews and HIS clinic staff

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