



# Malaria

## *Tips for travelers*

**Traveling in tropical and subtropical areas puts you at risk for malaria, a disease that is carried by mosquitoes. This handout explains how to protect yourself and your family from this disease.**

Malaria is the greatest disease threat for travelers in most tropical and subtropical countries. Humans can get malaria if they are bitten by an infected mosquito. Worldwide, 300 million to 500 million people get malaria every year. About 1,000 of these people are travelers from the United States.

Symptoms of malaria include:

- Fever and flu-like symptoms
- Chills
- Muscle aches and pains
- Tiredness
- Headache
- Abdominal pain
- Diarrhea

Symptoms usually begin 1 to 2 weeks after being bitten by an infected mosquito. But, symptoms can also start 4 weeks or longer after being bitten. If it is not treated, malaria can cause anemia, jaundice, kidney failure, coma, and death.

## **Prevention**

You can lower your risk of getting malaria by taking a medicine that can prevent a malaria attack and by taking care to prevent mosquito bites. But, even travelers who take these precautions sometimes get malaria.

When you travel in rural tropical or subtropical areas:

- Stay indoors between dusk and dawn, when the mosquitoes that carry malaria are most likely to bite.
- When you are outdoors, stay in screened areas as much as possible.
- Wear clothing that covers your arms and legs.
- Use an insect repellent on exposed skin when you are outdoors.
- Use a mosquito net where you sleep.

To learn more about how to prevent mosquito and other insect bites, see our brochure “Avoiding Insects.”

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## After Your Trip

- Visit your doctor for any flu-like illness or fever that occurs while you are traveling and for up to 1 year after you return home.
- **Do not donate blood for 1 year after being in an area where you were at risk for malaria.**

## Drugs to Prevent Malaria

No anti-malaria drug is 100% effective. Which drug will work best for you depends on where you are going and whether drug-resistant malaria is reported in these areas. The right drug for you is also based on your age, health, allergies, and other factors.

Your doctor may choose one of these anti-malaria drugs for you to take:

- Chloroquine phosphate (brand name: Aralen)
- Hydroxychloroquine sulfate (brand name: Plaquenil)
- Mefloquine (brand name: Lariam)
- Doxycycline (several brand names)
- Atovaquone/Proguanil (brand name: Malarone)

### Special Note for Women

Anti-malarial drugs are **not** safe to take if you are pregnant.

## Chloroquine Phosphate (Aralen)

### *Adult Dose*

Take 500 mg by mouth once a week if you are going to an area with chloroquine-sensitive *Plasmodium falciparum* malaria. Take your weekly dose starting 1 to 2 weeks before you enter an area where there is malaria. Keep taking it once a week while you are there, and once a week for 4 weeks after you leave the area.

### *Cautions*

- Drug interactions can occur with Kaopectate, methotrexate, metronidazole (Flagyl), Phenergan, and cimetidine.
- Chloroquine can be used **with caution** in people who have *psoriasis*, *porphyria*, or liver dysfunction.
- Do **not** use chloroquine if you have *retinal degeneration* (various conditions that affect eyesight).
- Chloroquine can make a rabies vaccine that is given into the skin less effective, if the chloroquine is taken sooner than 1 week after the last rabies vaccine.
- Do **not** use chloroquine if you are pregnant.

## Hydroxychloroquine Sulfate (Plaquenil)

### *Adult Dose*

Take 2 pills at the same time (200 mg each for a total of 400 mg) by mouth once a week. This drug is may be taken instead of chloroquine.

### *Cautions*

- Drug interactions can occur with digoxin, rifampin, and possibly with the drugs listed above under chloroquine.
- Hydroxychloroquine can be used **with caution** in persons who have *psoriasis* (a skin condition), *porphyria* (a disease that can affect both your nervous system and skin), or liver dysfunction.
- Do **not** take hydroxychloroquine if you have *retinal degeneration* (various conditions that affect eyesight).
- Do **not** take hydroxychloroquine if you are pregnant.

## Mefloquine (Lariam)

This drug is recommended for travelers who are going to areas where there is malaria that cannot be treated effectively with chloroquine.

### *Adult Dose*

Take 1 tablet (250 mg) once a week 1 to 2 weeks before entering the malaria-risk area. Keep taking it once a week while you are there, and once a week for 4 weeks after leaving the malaria-risk area.

### *Cautions*

- Do **not** take mefloquine if you have had any of these conditions:
  - Epilepsy or other seizure disorders
  - *Cardiac conduction* problems (the system that causes the heart to beat)
  - Psychosis, major depression, or other significant psychiatric conditions
  - Serious liver problems
- Drug interactions can occur with certain anti-seizure medicines.
- Minor side effects tend to come and go and not last long. They include nausea, stomach problems, sleeping problems, vivid dreams, nightmares, dizziness, lightheadedness, headache, vision problems, or other nervous system or mental symptoms.
- Stop taking mefloquine if you have anxiety for no clear reason, depression, restlessness, nightmares, or confusion.
- Do **not** take mefloquine for 2 months before becoming pregnant, and do **not** take mefloquine if you are pregnant.

### ***How to Take Mefloquine***

Take mefloquine with at least 8 ounces of water, soon after a meal. To lessen side effects, do not drink alcohol or take the antibiotics Cipro and Levaquin within 12 hours of the mefloquine dose.

### **Doxycycline**

#### ***Adult Dose***

Starting 1 to 2 days before you enter an area where there is malaria, take 1 (100 mg) tablet every day with your evening meal. Keep taking doxycycline once a day while you are in the area and every day for 4 weeks after leaving. **Missing your dose even 1 day can cause you to get malaria.**

#### ***Cautions***

- Doxycycline makes your skin more sensitive to the sun. While you are taking doxycycline, wear a sunscreen with an SPF of at least 30 that protects against both UVA and UVB rays.
- Other side effects include:
  - Vaginal yeast infections
  - Damage to the *esophagus* (the tube that carries food from the mouth to the stomach) if the drug is taken right before lying down and without enough liquids
- Pepto-Bismol affects how well doxycycline is absorbed.
- Do **not** give doxycycline to children younger than 8 years old.
- Do **not** use doxycycline if you are pregnant.

### **Atovaquone/proguanil (Malarone)**

#### ***Adult dose***

Starting 1 or 2 days before entering the area where there is malaria, take 1 tablet (250 mg atovaquone plus 100 mg proguanil) every day. Keep taking it every day while you are there, and for 7 days after leaving.

#### ***Cautions:***

- Do **not** take atovaquone/proguanil if you have severe kidney problems.
- This drug can cause abdominal pain or nausea and vomiting.
- This drug is costly. Many insurance companies do not pay for it.
- Do **not** use atovaquone/proguanil if you are pregnant.

## Drugs to Prevent Malaria

This chart helps you compare doses and side effects side-by-side. All of these anti-malaria drugs are available by prescription in the United States.

Generic Names Brands	Chloroquine phosphate Aralen	Hydroxychloroquine sulfate Plaquenil	Mefloquine Lariam	Doxycycline Vibramycin, Vibra Tabs, Doryx, others	Atovaquone/ proguanil Malarone		
<b>Adult Dose</b>	500 mg salt = 300 mg base <b>1 tablet weekly</b> , 1 week before through 4 weeks after trip	200 mg salt = 155 mg base <b>2 tablets weekly</b> , 1 week before through 4 weeks after trip	250 mg salt once weekly <b>1 tablet weekly</b> , 1 week before through 4 weeks after trip	100 mg once daily <b>1 tablet daily</b> , 1 day before through 4 weeks after trip	<b>1 Adult tablet daily</b> , 1 day before through 7 days after trip <i>Adult tablets = 250 mg/100 mg</i> <i>Pediatric tablets = 62.5 mg/25 mg</i>		
<b>Pediatric Dose</b>	5 mg (base)/kg/week (5 mg base = 8.3 mg salt)		5 mg (salt)/kg/week Less than 20 kg = ¼ tablet 21-30 kg = ½ tablet 31-45 kg = ¾ tablet	2.2 mg per kg of body weight, up to a full adult dose of 100 mg/day	<i>Weight in kg</i>	<i>Adult tab</i>	<i>Ped tab</i>
					11-20	¼	1
					21-30	½	2
					31-40	¾	3
					Over 40	1	
<b>If Pregnant</b>	<b>Do not take</b>	<b>Do not take</b>	<b>Do not take</b>	<b>Do not take</b>	<b>Do not take</b>		
<b>Side Effects</b>	<i>Common:</i> Nausea, headache, may make psoriasis worse <i>Sometimes:</i> Rash, reversible corneal clouding over, partial hair loss <i>Rare:</i> Nail/mucus membrane color change, nerve deafness, sun sensitivity, psychosis, seizures, eye problems		<i>Common:</i> Dizziness ( <i>vertigo</i> ), nausea, headache, diarrhea, strange dreams, trouble sleeping ( <i>insomnia</i> ) <i>Rare:</i> Seizures, mental disorder, low blood pressure	<i>Common:</i> Stomach upset, yeast infections, strong sun sensitivity <i>Rare:</i> Severe allergic reactions Damage to esophagus if not taken with enough water	<i>Common:</i> Mild stomach upset, headache <i>Sometimes:</i> Mouth sores <i>Rare:</i> Hair loss, itchy rash		
<b>Comments</b>	Useful only in certain areas where there is no malaria resistance Take close to bedtime to reduce side effects		Do not take if have had seizures, psychosis, depression, or if taking quinidine or meds for seizures or irregular heartbeat Do not drink alcohol for 24 hours before and 24 hours after taking Do not take within 24 hours of taking oral typhoid vaccine Can split dose in half and take at 2 different times in a week	Must use UVA and UVB sunscreen while taking Do not use if pregnant or nursing – use backup method of birth control Take with food Do not take with antacids or Pepto-Bismol Do not take within 24 hours of taking oral typhoid vaccine Prevents leptospirosis and rickettsia diseases	Take with food or drink that contains milk Take at the same time each day Do not take with tetracycline, rifampin, or metoclopramide		

## Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

Travel Services/Family  
Medical Center  
4245 Roosevelt Way N.E.  
Seattle, WA 98105

Phone: 206-598-4055  
Fax: 206-598-5720

## Directions to Travel Services/Family Medical Center at UWMC-Roosevelt

### *From Interstate 5*

- Exit at N.E. 45th St. (#169).
- Go east on N.E. 45th St.
- Turn right (south) onto Roosevelt Way N.E. and go a few blocks to the clinic.

### *Going West on State Route 520*

- Exit onto I-5 north.
- Take the 1st exit (#169).
- Turn right (east) onto N.E. 45th St.
- Turn right onto Roosevelt Way N.E. and go a few blocks to the clinic.

### *From UWMC*

- Go west on N.E. Pacific St.
- Turn right onto 15th Ave. N.E.
- Turn left onto N.E. 45th St.
- After 5 blocks, turn left onto Roosevelt Way N.E.

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