

MEDICAL INFORMATION

USEFUL HEALTH INFORMATION

MALARIA

Malaria is caused by infection with one or more of the four species of the parasite *Plasmodium*: *P. falciparum*, *P. vivax*, *P. ovale*, and *P. malariae*. The disease is transmitted by the bite of an infected female *Anopheles* mosquito. Malaria occurs primarily in tropical and subtropical regions of Africa, Asia, Central and South America, and Oceania. Travelers going to an area where malaria is present should take preventive medications. The Centers for Disease Control in Atlanta, Georgia, recommends taking one of the following medications to prevent malaria: Aralen (chloroquine phosphate), Lariam (mefloquine), doxycycline or an Aralen and Paludrine (proguanil) combination. Aralen and Lariam are the preferred medications for malaria prevention. Lariam is used in areas where chloroquine-resistant *P. falciparum* occurs. Aralen or Lariam are taken once a week beginning one week before arrival in the infected area and continuing four weeks after departure from the infected area. For those travelers unable to take Lariam, daily doxycycline is an alternative regimen for travel to areas where chloroquine-resistant *P. falciparum* can be acquired. It is also the drug of choice for areas where chloroquine-resistant and mefloquine-resistant *P. falciparum* occurs. Daily Paludrine in conjunction with weekly Aralen is an alternative drug regimen for chloroquine-resistant *P. falciparum* areas. This regimen is used for those travelers who cannot tolerate Lariam or doxycycline. Paludrine is not available in the U.S. but can be purchased in Canada, Africa or Europe.

The major human defense against malaria is avoidance of exposure to mosquitoes. This includes sleeping inside screened areas, wearing clothing that covers the arms and legs, avoiding outdoor activities in the evening when the mosquitoes are most active, and using mosquito repellent. The most effective repellents contain N, N-diethylmethyltoluamide (DEET) in approximately a 35% concentration. A long-acting formulation is Ultrathon. Other recommended repellents are Deet-Plus, Repel and Deep Woods Off. High concentrations of DEET may cause severe skin rash, and are not recommended for children or pregnant women. Insecticides containing pyrethrum may be sprayed in living or sleeping areas at night and use of mosquito nets impregnated with pyrethrum will further improve protection from malaria.

MEDICATIONS FOR MALARIA

ARALEN (generic: chloroquine phosphate)

Aralen is administered in a dose of 500 mg. weekly, beginning one week before arrival and continuing four weeks after

departure from the area where malaria is found. Some healthy individuals will experience slight nausea, and Aralen should never be taken on an empty stomach. Other reactions such as mild headache, dizziness or blurred vision can occur but are rare. Only when these symptoms are more severe and persistent should the medication be discontinued, and then only after consulting a physician, if possible. Aralen is considered a safe malaria prophylaxis for pregnant women. In all persons with G6PD deficiency this malaria medication should be used with extreme caution.

LARIAM (generic: mefloquine)

Lariam is similar in structure to quinine, the original treatment for malaria. It is highly effective against chloroquine-resistant malaria. Lariam is administered in a dose of 250 mg. weekly, beginning one week before arrival and continuing four weeks after departure from the area where malaria is found. It should be taken with at least 8 oz. of water, and never on an empty stomach. The most common side effects are nausea or dizziness, usually brief in duration. This drug has also been associated with a slowing of the heart rate. Lariam should not be used by patients taking certain specific heart and blood pressure medications such as beta blockers or calcium channel blockers. Also, it is not to be used with the following medications: quinine, quinidine, valproic acid, Seldane, Hismanal and Claritin. This medication should not be used by pregnant women.

DOXYCYCLINE (generic)

Doxycycline is used for those persons who are unable to take chloroquine or mefloquine. It is an alternative regimen for travelers to areas where chloroquine-resistant *P. falciparum* can be acquired, and it is a drug of choice for travelers to mefloquine-resistant *P. falciparum* areas as well. Doxycycline is administered in a dose of 100 mg. daily, beginning 1 or 2 days before arrival and continuing four weeks after departure from the area where malaria is found. This drug is a form of tetracycline and may cause photo sensitivity, usually manifested as an exaggerated sunburn reaction. This can be minimized by avoiding prolonged, direct exposure to the sun, using sunscreens that absorb long-wave ultraviolet (UVA) radiation and by taking the drug in the evening. Doxycycline is also associated with an increased frequency of vaginal yeast infections. The most common side effects are dizziness, nausea and vomiting which may be minimized by taking the drug with a meal. Doxycycline should not be used in pregnancy, by children under 8 years of age, or in persons with an allergy to tetracycline.

RESPIRATORY INFECTIONS

Respiratory infections are common in travelers, especially in areas of high pollution. The causes are varied, including exposure to respiratory viruses of the local area, and only general precautions can be recommended to prevent illness. These include avoiding contact with persons known to be ill, washing hands after personal contact and drinking plenty of fluids (especially water). Although influenza virus is seasonal in the northern latitudes, it is not in the tropics. All travelers should be immunized against influenza, especially individuals over age 65, or those with underlying lung or heart disease, who should, in addition, receive the pneumococcal vaccination.

Antibiotics should be used sparingly in respiratory infections since the majority will be caused by viruses which do not respond to antibiotic therapy. Tylenol, decongestants, fluids and rest are the first line of defense. When using over the counter drugs such as Tylenol one should follow the directions carefully never exceeding the recommended daily dosage (approximately 3500 mg.). It is also recommended that you limit the use of Tylenol if you have not been eating regular meals for several days, have been consuming any significant amount of alcohol concurrently or have a history of liver dysfunction.

Those persons with chronic illness who are at high risk of infection, travelers to areas with known high incidence of respiratory infections and those persons who travel off the beaten path for extended periods where medical care is unavailable may want to travel with antibiotics. Common symptoms of respiratory infections are low grade fever, fatigue, headache, congestion and a cough productive of yellow or green sputum. These symptoms do not distinguish between respiratory infections that will or will not respond to antibiotics. When symptoms are extremely severe or prolonged, a medical professional should be consulted immediately, if available.

MEDICATIONS FOR RESPIRATORY INFECTIONS

CIPRO (generic: ciprofloxin)

Cipro is a broad spectrum antibiotic that is highly effective against many types of bacteria that cause respiratory infections. The dosage is 500 mg. every 12 hours for 10 days. A common side effect of ciprofloxin is nausea which can be reduced by taking it with food, although absorption is enhanced on an empty stomach. Cipro has also been associated with sun sensitivity. (Note: Cipro is not always effective against strep throat).

DOXYCYCLINE (generic)

Doxycycline is a broad spectrum antibiotic that is effective against many respiratory bacteria. It should not be used by

persons who are allergic to tetracycline. The dosage is 100 mg every 12 hours for 10 days. Common side effects are nausea, dizziness, and vomiting, which can be reduced by taking doxycycline with food (non-dairy food products) and rash or significant sunburn reaction with exposure to sunlight. This may be minimized by avoiding exposure to the sun and using sunscreens, and by taking the drug in the evening. Doxycycline is also associated with an increased frequency of vaginal yeast infections. Doxycycline should not be used by pregnant women or children under 8 years of age. (Note: Doxycycline is not always effective against strep throat.)

PHENYLPROPANOLAMINE HCL or *PSEUDOEPHEDRINE HCL* (generic)

These are long-acting decongestants used for the relief of nasal congestion associated with respiratory illness. They are often combined with expectorants (guaifenesin). Some common brand names are Entex LA and Duratuss. The dosage is 1 tablet every 12 hours. Common side effects are nervousness or dizziness.

AFRIN Nasal Spray (generic: oxymetazoline hydrochloride)

This is another compound used for relief of nasal congestion associated with respiratory illness. The dosage is 2-3 sprays in each nostril twice daily, morning and evening. Do not use this product more than 3 days, and if congestion persists, consult a physician. Common side effects are nasal irritation and sneezing. For persons susceptible to congestion associated with flying, use before and during flight may help alleviate symptoms.

SAFE FOOD

In developing countries, and particularly in rural areas where hygiene and sanitation are poor, travelers should select food with care. Safe food practices are strongly recommended.

A) *PERSONAL HYGIENE* should be meticulous. Hands should always be washed before handling food and beverages.

B) *MEATS* should always be freshly cooked and well done before eating. Do not eat meat rare or even medium rare. *AVOID* sausage altogether.

C) *SHELLFISH* and *FISH* should never be eaten raw. Many types of local fish and shellfish are delicacies, but they must be thoroughly cooked before eating. Since fish tends to spoil quickly, it is not wise to eat saltwater fish far from the sea. *TROPICAL REEF FISH*, such as red snapper, grouper, barracuda, amberjack, surgeonfish and sea bass, are sources for ciguatera fish poisoning. The presence of this toxin is unpredictable and episodic after storms,

earthquakes or manmade disturbances of the coral reef system. The toxin is heat-stable. Therefore, cooking does not make the fish safe to eat. Ciguatera fish poisoning is a potential risk in all tropical and subtropical insular areas of the West Indies, Caribbean, Pacific, and Indian Oceans.

D) VEGETABLES and FRUIT can be source of contamination. Eat cooked vegetables only. **AVOID** all raw vegetables and salads. Rinsing salad ingredients will not make them safe. Fruit is usually safe to eat when the skin is undamaged and you peel it personally.

E) MILK PRODUCTS should be selected with care. Unpasteurized milk is unsafe. **AVOID** ice cream, cheese, mayonnaise, dressings, custards, cream fillings and pies. A familiar brand of cheese in its original packaging is usually safe to eat. Hard boiled eggs are safe as long as you peel them personally.

F) BREADS and other dry baked goods are safe to eat.

G) All cooked foods should be eaten while they are hot and not at room temperature. "Hot and Spicy" cuisine does not protect the traveler from food contamination.

*Source: Center for Disease Control: Health Information for International Travel, 19933. (CDC) Document #220004

SAFE WATER

In countries where chlorinated water is not available and sanitation is poor, safe water practices should be followed:

A) TAP WATER

AVOID tap water; it is contaminated. Do not brush your teeth in tap water; use bottled water if available. **AS A LAST RESORT ONLY:** tap water that is **EXTREMELY** hot to touch is moderately safe to drink. Allow water to cool to room temperature in a thoroughly cleaned container before using for teeth or for drinking.

B) CANNED and BOTTLED CARBONATED DRINKS

These are safe to drink, including most bottled waters. Make sure seals have not been broken. Purchase canned and bottled beverages that are familiar to you, "well-known brands". It is safer to drink from a can or bottle than from a questionable glass. However, water on the outside of a can or bottle may also be contaminated. Make sure the opening is thoroughly cleaned off before drinking.

C) BEER and WINE

Beer and wine are safe beverages to drink. Make sure the wine is corked. The seals of cans of boules must be intact and the opening to the container must be clean.

D) ICE

Only ice made from bottled water is safe to use. Avoid ice in alcoholic beverages. The alcohol will not sterilize the water. This also includes frozen alcoholic beverages.

E) HOT BEVERAGES

Beverages made from boiled water are considered safe to drink (i.e. coffee, tea, soups and consomme). Boiled milk is also safe, otherwise, use only canned milk.

WATER TREATMENT

BOILING is the most reliable method for making water safe to drink. Water should come to vigorous boil for several minutes and then allowed to cool to room temperature before drinking. Do not add contaminated ice to cool the water. Ice cubes can be made from boiled water.

CHEMICAL DISINFECTION is alternative for water treatment when it is not possible to boil the water. One method of disinfection is Iodine or Chlorine tablets. Iodine tablets (Globaline, Potable Agua, and Coghlan), are far superior to Chlorine (Halazone) tables in killing amebic and possible giardia lambia cysts.

Tablet Method: 1 tab for clear water, 2 tabs for cloudy water. Filter cloudy water to remove floating material. Another method for disinfection is with tincture of iodine. Tincture of Iodine Method: (2%): 1 drop = 0.05 ml. Add 5 drops per quart or liter to clear water. Add 10 drops per quart or liter to cloudy water. Let stand for 30 minutes. Very cloudy or very cold water may require a longer contact time. Allow to stand several hours before using.

TRAVELERS' DIARRHEA

The term travelers' diarrhea describes the symptoms of an intestinal infection usually caused by specific bacteria, but sometimes by parasites or viruses. It is a common medical problem among people traveling to lesser-developed tropical and semitropical countries. Infectious agents are most often transmitted by consumption of contaminated food and water. Symptoms are several loose or watery stools per day with or without abdominal cramping, nausea, vomiting and low grade fever. Typical travelers' diarrhea lasts 3-5 days or less. A more explosive, profuse, but non-bloody diarrhea can also occur, and in some regions needs to be distinguished from cholera. Cholera is an illness in which dehydration occurs rapidly due to almost continuous watery diarrhea that is said to resemble rice water. Dehydration is a serious medical concern in any severe case of diarrhea, especially for children and the elderly. The best oral rehydration fluid is a balanced solution of sodium and potassium-containing salts with glucose or another carbohydrate (see brochure for appropriate mixture). Resting the intestines by limiting oral intake to, easy to, digest fluids, or foods such as bananas, rice or pasta, should hasten recovery. An anti-motility drug

such as Imodium A-D (loperamide), Lomotil (diphenoxylate HCL and atropine) or Pepto-Bismol is also helpful in travelers' diarrhea. Pepto-Bismol may also be used for prevention of travelers' diarrhea. These anti-motility agents should not be used in acute dysentery, ulcerative colitis, cholera or liver dysfunction.

When diarrhea includes symptoms such as high fever, severe abdominal pain and tenderness, prostration or bloody stools, a medical professional should be consulted immediately. If medical attention is not available, antibiotics should be started, but not Imodium A-D or Lomotil.

MEDICATIONS FOR TRAVELERS' DIARRHEA

PEPTO-BISMOL (generic: bismuth subsalicylate)

Pepto-Bismol can be used both to prevent travelers' diarrhea and to treat diarrhea. Medical studies show that the bismuth component acts as an antibacterial agent and the salicylate component as an antisecretory and anti-inflammatory agent reducing the output of diarrheal fluid. A commonly used preventive regimen is 2 tablets with each meal and at bedtime during travel not to exceed 21 days in total. For treatment, 2 tablets or 30 ml every 30 minutes for a maximum of 8 doses in a 24 hr. period, will cure most simple travelers, diarrhea. Common side-effects are darkening of the tongue and stool. Peptobismol should be avoided by those who are allergic to, or intolerant of aspirin, have a history of peptic ulcer disease or gastrointestinal bleeding, or who are taking anticoagulants.

IMODIUM A-D (generic: loperamide)

Imodium is effective in quickly reducing diarrhea. It has a rapid and direct anti-motility and antisecretory effect on the bowel. The dosage for treatment is 2 capsules immediately, then 1 pill after each loose stool, not to exceed 8 capsules over a 24hrs. period. Imodium A-D should not be used in acute dysentery, ulcerative colitis, cholera, liver dysfunction or pregnancy.

LOMOTIL (generic: diphenoxylate HCl atropine sulfate)

Lomotil is another anti-motility agent that quickly reduces diarrhea. The dosage for treatment is 2 pills immediately, then 1 pill after each loose stool, not to exceed 8 pills over a 24 hr. period. Lomotil should not be used in acute dysentery, ulcerative colitis, cholera, liver dysfunction or pregnancy.

CIPRO (generic: ciprofloxin)

Cipro is a broad spectrum antibiotic that is highly effective against many more severe, diarrhea-causing bacteria. Antibiotic therapy should be used when symptoms include high fever, severe abdominal pain and tenderness, or

bloody stools and medical attention is not available. The dosage is 500 mg. every 12 hours for 3-5 days. A common side effect of ciprofloxin is nausea (which can be reduced by taking it with food), headache and sun sensitivity.

BACTRIM DS (generic: trimethoprim/sulfamethoxazole)

Bactrim DS is another broad spectrum antibiotic that is effective against many more severe, diarrhea-causing bacteria. It cannot be used by those with sulfa allergy since it contains sulfa. The dosage is 2 tablets immediately followed by 1 tablet every 12 hours for 3-5 days. Common side effects are nausea, which can be reduced by taking it with food, and rash or significant sunburn reaction with exposure to sunlight. This may be minimized by avoiding prolonged exposure to the sun and using sunscreens.

CHECK WITH YOUR DOCTOR BEFORE YOUR TRIP TO ENSURE YOU HAVE TAKEN THE RELEVANT PRECAUTIONS FOR THE FOLLOWING:

YELLOW FEVER

Infection caused by a virus carried by monkeys, transmitted through mosquitos who carry the virus from the monkey to the human. The symptoms are a short, mild fever often leading to jaundice, failure of the liver and kidneys and eventually death. The vaccine is effective. The vaccination is valid for 10 years and is usually only available in specialist clinics or hospitals. A valid Yellow Fever inoculation certificate is required if arriving from or via an infected area having passed through that area by any other means than a scheduled flight. A yellow fever inoculation certificate is required if arriving from or via an infected area.

RECOMMENDED IMMUNIZATIONS

Hepatitis A

Hepatitis A, also called 'infectious hepatitis' is basically an inflammation of the liver caused by a virus A. The virus is picked up from contaminated food and water. The symptoms are a slight febrile disorder, loss of appetite and jaundice. Almost everyone recovers within about 2 months. Precautions include immunization and avoiding salads, unpeeled fruit, sharing crockery and cutlery.

Malaria

Malaria is a danger in the lowland areas of Northern and Eastern Transvaal and parts of Eastern Natal reaching down to the Tugela River.

Polio

Polio or Poliomyelitis is an infection caused by a virus. It affects the motor neurone cells in the spinal cord mainly. The symptoms are fever and headache, weakness in a

group of muscles, then widespread paralysis. Sometimes there is respiratory paralysis and rapid death. There is an effective vaccine taken by mouth.

Tetanus

Tetanus (also known as lockjaw) is a disease caused by infection with 'clostridium tetani' which is present in soil and in the intestines of humans and animals. Infection can enter the body via cuts after which bacteria produce a toxin affecting the motor nerve cells in the spinal cord. This is followed by convulsions and muscle spasms. The vaccine is effective and the disease can also be treated by an antitoxin and penicillin.

Typhoid

Typhoid or 'enteric fever' is caused by infection with 'salmonella typhi'. The infection is passed from infected water, milk or food or by people preparing food or drinks. Symptoms are a rapidly fluctuating temperature, drowsiness, diarrhoea, abdominal rash, delirium and coma.

Immunization is effective. The disease is treatable with antibiotics.

Antimarsch Fever

If travelling in July or August.

Food Precautions

Avoid - unpeeled fruit, badly cooked meat, icecubes, untreated milk, ice cream if made from untreated milk. Take - Extra salt if in hot climates.

Drink Precautions

Purify water or make sure it is clean. If you are not sure avoid it. Bottled water, soft drinks (sodas) and beer are usually widely available.



Nurse listens to mothers explain children's illnesses at Serrekunda clinic



St. Mary's students in front of the Serrekunda Health Center, with Dr. Grace