

# Health Guidelines

## ECUADOR

### GENERAL INFORMATION

To protect your health in Ecuador, you need certain pre-departure immunizations followed by reasonable health precautions while in the country. The following health guidelines and requirements are based on years of experience and the current recommendations from the US Centers for Disease Control and Prevention. They are designed to inform you of health concerns that may be present in Ecuador especially as you venture to smaller cities off the usual tourist track, or spend time in small villages and rural areas for extended periods. Although no information sheet can address every conceivable contingency, the following health guidelines and requirements are an attempt to provide you with a standard, which if followed, should optimize good health during your stay abroad.

You may find that local customs and practice, as well as varying US physicians' approaches, at times conflict with these guidelines. It is essential that you review these health guidelines and requirements with your physician, to discuss individual issues such as pre-existing medical problems, mental health concerns, and / or allergies to particular drugs. Any further questions or concerns should be directed to the US Centers for Disease Control and Prevention (CDC) in Atlanta ([www.cdc.gov/travel](http://www.cdc.gov/travel)) or to your own physician.



### PREVENTION OF INSECT-BORNE ILLNESS

Insect precautions are recommended for this program. The CDC offers a number of suggestions on how to decrease the likelihood of insect bites, and thus avoid contracting some of the illnesses outlined below. Some suggestions include:

- Wearing long-sleeve shirts and pants in areas / times of day that are more mosquito prone
- Using an appropriate bug repellent. The CDC recommends DEET, Oil of Lemon Eucalyptus (OLE), and / or Picaridin.
- Use Permethrin treated clothing

### Malaria

The CDC notes that the prevalence of malaria in Ecuador is "very low." However, you are at potential risk at lower altitudes, so for full protection participants should consider proactive measures, including antimalarial medications.

## **Malaria prophylaxis drugs to be discussed with your physician:**

- **Atovaquone/proguanil (Malarone)** is a combination drug of atovaquone and proguanil that stops the development of malaria parasites. It is effective against chloroquine-resistant strains of *P. falciparum* malaria. It is used for prevention of malaria in a **daily** dose with food or milk starting 1–2 days before travel to malarious area and continuing for 7 days after return. Although Malarone may cause mild headache, nausea, vomiting, and some muscle pain, it has fewer neuropsychiatric side effects than mefloquine.
- **Doxycycline** is an antibiotic that prevents the development of malaria-causing parasites in the blood. It is related to the antibiotic tetracycline. Doxycycline prophylaxis can begin 1–2 days before travel to malarious areas. It should be continued **daily** during travel in the malarious areas and for 4 weeks after the traveler leaves the malarious area. The dosage of doxycycline is one capsule **daily**. Travelers who use doxycycline should be cautioned about possible adverse reactions due to sunlight exposure, such as sunburn and photosensitivity, as well as other side effects including diarrhea, nausea, and vaginal yeast infection in women.
- **Mefloquine** is an antimalarial drug for prophylaxis. It is effective against chloroquine-resistant and Fansidar-resistant *P. falciparum* malarial infections. Tanzania has *P. falciparum* malaria resistance to both chloroquine and Fansidar. The regimen consists of a single dose of mefloquine to be taken **weekly**, starting 1 to 3 weeks before travel. Prophylaxis should be continued **weekly** during travel in malarious areas and for 4 weeks after a person leaves such areas.

Mefloquine should be used with caution. Many people using mefloquine may experience minor side effects initially including nausea, mild headache, dizziness, or bad dreams. Because of the potentially serious results of contracting malaria, your physician may recommend continuing the medication unless the symptoms

become intolerable.

If you are pregnant or have a history of significant emotional or psychiatric problems, including depression, severe anxiety, anorexia/bulimia, schizophrenia, and bipolar disorder, or medical problems including epilepsy and cardiac conduction abnormalities, you must communicate with your physician at home regarding the use of mefloquine and possible alternative drugs. More severe side effects such as fainting, vomiting, vertigo, depression, or confusion may require stopping mefloquine and contacting a physician to consider one of the alternative drugs.

There are potential adverse drug interactions between mefloquine and other medicines and drugs, including alcohol. In particular, treatment for malaria using quinine or chloroquine should not be administered less than 12 hours after the previous dose of mefloquine. Any cardiac medication especially beta blockers or calcium channel blockers, should be approved by a physician who is familiar with mefloquine's drug interactions and who knows you are receiving mefloquine for malaria prophylaxis.

## **Dengue**

Dengue is a viral disease and is transmitted by mosquitoes which bite primarily in the daytime. It occurs in urban as well as rural areas including on the Galapagos Islands. No risk exists in Quito. There is no licensed vaccine against it, but personal protective measures against mosquito bites are effective in prevention. Insect repellents, protective clothing such as long-sleeved shirts and pants, plus the use of Permethrin-treated mosquito netting are therefore essential. The disease causes considerable discomfort (fever, body aching), but is self-limited in adults.

## **Chikungunya**

Chikungunya is an arboviral infection that is transmitted by day-biting *Aedes* mosquitoes. It is prevalent in tropical Africa and Asia, parts of Central and South America, and the Caribbean. Cases have recently been confirmed in Ecuador; mostly in the western half of the country. Symptoms are typically fever and joint pain. There

is no licensed vaccine against it, but insect precautions and personal protective measures (especially during peak times (early morning and late afternoon) are the main prevention strategy.

### Zika

Zika is a viral infection that is also transmitted by the bite of the *Aedes* mosquitoes. Symptoms include mild fever, rash, conjunctivitis (red eyes), joint or muscle pain and headache. The disease causes considerable discomfort, but is mild and self-limited, lasting for several days to a week. There are no vaccines or medications available to prevent or treat Zika infections therefore students should be vigilant in using insect precautions and personal protection measures against day-biting mosquitoes (see insect precautions section above).

### Leishmaniasis (Cutaneous and Mucocutaneous)

Leishmaniasis is a protozoan infection that causes skin ulcers and is transmitted by the bite of sand flies and occurs especially in Amazonian regions. Insect precautions are recommended.

### Yellow Fever

This is a viral disease transmitted by mosquitoes that occurs only in parts of Africa and South America. Yellow fever is characterized by severe hepatitis with fever. It may be prevented by avoiding mosquito bites (personal protective measures) and by getting the vaccination shots that are available at any yellow fever vaccination center (consult your physician for the nearest center).



## PREVENTION OF FOOD- AND WATER-BORNE ILLNESSES

### Diarrhea-Producing Infections

“Traveler’s diarrhea” is the most common form of diarrhea in Ecuador. This is a self-limited diarrhea lasting from a few to several days, characterized by watery, non-bloody bowel movements. Traveler’s diarrhea usually requires no treatment other than fluid replacement including ORS (the World Health Organization’s oral rehydration solution which comes in package form) or other homemade solutions such as 1 teaspoon salt, 1/2 teaspoon baking soda, and 2–3 tablespoons sugar or honey in 1 liter of **clean** water; or carbonated soda diluted by one half. Antidiarrheals such as Imodium or Lomotil may be used short-term in some circumstances. Pepto Bismol in large amounts and certain antibiotics (doxycycline, sulfa-TMP, ciprofloxacin) can prevent or attenuate the infection. Antibiotics are indicated for more severe cases of traveler’s diarrhea.

More protracted and disabling diarrheal illnesses may be due to giardiasis and amoebic dysentery (caused by parasites) and bacillary dysentery (caused by bacteria), including cholera and typhoid. These infections (as well as “traveler’s diarrhea”) are caused by contaminated food and water. Therefore, the best way to avoid such infections is to respect certain do’s and don’ts:

**DO WASH** your hands scrupulously with non-contaminated water and soap before eating and snacking.



## **DO DRINK**

- Bottled or canned beverages (water, soda, soft drinks) from a trusted source (ensure caps are sealed).
- Hot beverages (coffee, tea).
- Water that reached a rolling boil for at least one minute at sea level (longer at higher altitudes).
- Carbonated mineral water.

## **DON'T DRINK**

- Tap water, even in ice; don't risk using it for brushing your teeth either.
- Tap water in larger cities is often safe, but the water in rural areas is probably not, so be sure to check with a reliable source before using, and if in any doubt, take all the recommended precautions.

## **DO USE**

- Commercial iodide or tinctured liquid iodine to treat water, **ONLY** if bottled water (from a trusted source) is not available and boiling water is not possible. Chlorine in various forms is less reliable than iodine. These provide substantial protection when added to tap water.

## **DO EAT**

- Cooked vegetables, fruits with thick covering (citrus, bananas, and melons); and well-washed raw fruits and vegetables.
- Meat or fish that is thoroughly cooked (pork and lamb should be very well done).
- Pasteurized dairy products from large commercial dairies.

## **DON'T EAT**

- Unwashed or unpeeled raw fruits and vegetables.
- Fruits that do not have a thick, disposable outside covering.
- Rare or raw meat or fish or shellfish.
- Dairy products from small, independent vendors without pasteurizing facilities, including food of any kind that has been left out in the sun, especially custards, creams, and mayonnaise.
- Raw (unpasteurized) milk or milk products. Tuberculosis and brucellosis, both serious diseases are transmitted in this way, so the consumption of unpasteurized milk and milk products should be strictly avoided.

There may be times when refusing an offer of food or beverage, even a drink with ice or avoiding a salad will be considered rude. You must decide for yourself, but polite refusals, thought out in advance, are often handy. Discuss these alternatives with your Academic Director(s).

## **Typhoid Fever**

Typhoid is an infection caused by a particular species of the salmonella bacterium. It is spread by contaminated food and water. Symptoms include fever, severe toxicity, rash, and in about half the cases, bloody diarrhea. Untreated, there is a 30% mortality rate. Vaccines are 60–70% effective in prevention. One vaccine involves a single injection, with immunity lasting 2 years. A second one is administered orally every other day for 4 doses, and lasts 5 years. Antibiotic resistance has been developing, but treatment of the disease with certain well-known antibiotics is usually effective. As with all diarrheal illnesses, careful dietary discretion continues to be the main line of defense.

## **Hepatitis A**

Hepatitis A is a highly contagious virus that causes liver inflammation. It is most commonly spread through contaminated food and water. Most Americans have not previously been exposed to the hepatitis A virus and are at risk of contracting the disease during travel to areas where the disease is more prevalent. A very effective vaccine is available and should be administered 2–3 weeks prior to travel.

## **OTHER ILLNESSES**

### **Altitude**

Quito is over 9000 ft. above sea level and many points you visit are higher. Even healthy, athletic individuals may become ill at altitudes over 10,000 ft. Common symptoms are unbearable headache and severe shortness of breath out of proportion to the mild fatigue most people experience while becoming acclimatized. Ascending gradually and resting during the first 12-24 hours can minimize the risk of altitude sickness. You may also wish to consult your physician about obtaining some acetazolamide (Diamox). Note that this is contra-

indicated for those allergic to sulfa drugs and that this possibility should be discussed with your physician.

Any symptoms of severe altitude illness should result in *immediate* descent. Individuals with chronic heart and lung disorders, such as asthma, and any other preexisting medical condition including sickle cell or diabetes should consult a physician before traveling to high altitudes. If your physician has given approval for high altitude travel, do let us know about the condition so that we can advise your trip leaders and our local doctors accordingly. Bring full medical notes with you to help local doctors in case of need.



### **Prevention of Animal Bites and Infections**

Rabies is a viral disease almost always caused by animal bites. Dog rabies is rare in Ecuador; risk however exists from bats and other terrestrial animals. Nevertheless, *strict adherence to the following is important for a safe and rabies-free experience:*

- Avoid bites from all animals and especially avoid handling or feeding puppies, kittens, monkeys, or other animals. They can have rabies before it is obvious.
- If you have been bitten or have had direct contact with the saliva of a suspected rabid animal, immediately wash the affected area with a soap solution and running water thoroughly to neutralize and to rinse out the virus. ***Then proceed immediately for post-exposure treatment***, the sooner the better; depending on the location of the bite, you may have little time.
  - If at all possible, the animal should be captured and kept under cautious surveillance until the diagnosis and therapy are completed. If capture

is not possible, a clear description of the animal and the circumstance of contact should be carefully recorded.

### **Tuberculosis**

Tuberculosis (TB) is a bacterial disease spread by airborne droplets from a person with untreated pulmonary TB or by ingestion of TB-contaminated unpasteurized milk products. Transmission is more likely in conditions of crowding and poverty. A TB skin test can indicate prior exposure to tuberculosis and is required prior to travel (unless already known to be positive). A repeat test is recommended after returning to the US even if the pre-departure test was negative.

### **Hepatitis B**

Hepatitis B is a serious and often chronic viral infection of the liver. Since this type of hepatitis is most often acquired from contact with infected blood, sexual contact (as with HIV), or skin-to-skin contact of mutual open cuts and sores, appropriate precautions to avoid these types of exposure are necessary. This includes avoiding getting tattoos, or ear/body piercings and avoiding cuddling children with sores or draining insect bites. A series of three immunizing injections is recommended. This series should be initiated as early as possible so that at least two doses are taken prior to departure. This will provide partial protection. The third shot should be taken five months after the second dose, and may be given after returning home to achieve full, long-lasting immunity. An accelerated schedule can also be used as an alternative.

### **AIDS and Blood Supplies**

AIDS is a concern worldwide. AIDS is an acquired immune deficiency that can result in life-threatening infections. The HIV virus is transmitted by way of bodily fluids from an infected person. Other potential routes of infected blood transmission such as tattooing, body piercing and needle sharing must be strictly avoided.



## IMMUNIZATIONS FOR ECUADOR

Immunizations fall under two categories: 1) those that are required for The Experiment admission and 2) those that are recommended to protect your health and well-being by building up your immune defenses against specific prevalent diseases. In addition, certain basic immunizations are required by US law.

Plan ahead at least 10 weeks, as laid out in the sample schedule at the end of these instructions since some immunizations require more than one dose for effectiveness. The physician administering the inoculations should record all immunizations on the

International Certificate of Vaccination or Prophylaxis (ICVP, also known as the WHO card). The WHO card should be kept with you at all times while in the host country.

### Required (for participation in program):

- **MMR (measles, mumps, rubella):** You will need to be immunized if you have not had two doses of live measles vaccine.
- **Tetanus, diphtheria, pertussis:** The primary child series is required. Boosters (Td or Tdap) are effective for 10 years. If you are uncertain when you had your last injection, we recommend another booster.

### Recommended (as a health precaution - consult your physician):

- **Hepatitis A:** Hepatitis A vaccine, which provides long-term immunity, is recommended.
- **Hepatitis B:** A series of 3 immunization injections is recommended. See section on Hepatitis B.
- **Influenza:** Influenza vaccine should be considered for any individual wishing to decrease risk of influenza or non-specific respiratory illness especially those who are at high risk for complications from influenza including those with asthma, COPD, diabetes, chronic cardiovascular disease and immunocompromised conditions.
- **Typhoid:** This vaccine is strongly urged as a viable protective measure. The vaccine is given either orally or by injection. Discuss the relative merits of each with your doctor.

With reasonable attention to health and hygiene rules, your stay in the Ecuador should be a healthy one. Aside from minor ailments due to adjustments to the new food, water and climate, this is the experience of the large majority of Experimenters. We do, however, recommend you see your physician on returning to the US in order to test for any possible lingering infection contracted overseas.

**Take good care of yourself!**