

HIV-Infected Travelers

Traveler Summary

Pretravel Planning

The HIV-infected traveler who is immunocompromised must pay attention to a number of issues when preparing for international travel, such as:

- ┆ Susceptibility to infections present at the destination
- ┆ Accessibility of reliable health care overseas and the possible need for medical evacuation home
- ┆ Vaccine requirements, safety, and efficacy

A pretravel assessment is recommended and should include risks associated with the destination, current antiretroviral therapy, current viral load and CD4 count, medical history, and physical exam. Ideally, travelers should be on stable highly active antiretroviral therapy (HAART) regimens for 3 months before undertaking long trips. Newly diagnosed travelers with CD4 counts less than 200 or detectable virus may wish to delay travel until counts have improved with initiation of HAART, particularly if traveling to developing countries.

HIV- or AIDS-infected travelers must weigh the benefits of travel against any potential health risks. This must be a personal, informed decision made carefully with health care professionals who understand their patients' individual health statuses, including CD4 counts, and who can assess the risks associated with travel.

Restrictions for Crossing International Borders

Many countries, particularly those in Eastern Europe and the Middle East, restrict entry of travelers with HIV infection or AIDS and insist on HIV antibody testing for foreigners as a requirement of entry. These regulations apply mostly to students, workers, and other persons applying for long-term entry permits, but a few countries require persons visiting for as short as 2 weeks to be tested. Some countries insist on HIV testing after arrival and do not accept the results of testing done elsewhere. Some countries may deny entry to anyone suspected of being HIV positive.

Because countries do not have to report HIV test requirements to the World Health Organization (WHO) or to any other central reporting agency, travelers should contact the embassy or consulate of their destination country before departure and ask anonymously about HIV test requirements or other possible health-related visa requirements (immunizations, TB test, chest x-ray, etc.).

When HIV tests are required, determine if tests conducted in a traveler's home country will be accepted and if any special "test conditions" are required (when and where tests may be conducted, how to have results certified and authenticated, etc.). If a developing country requires a test to be performed on arrival, be cautioned that needles and syringes may not be sterile.

Degree of Immune Compromise

Before travel, a health care provider will determine the traveler's degree of immune compromise, viral load, and current CD4 level.

- ┆ HIV-infected individuals who have no replicating virus are no longer thought to be immunocompromised, regardless of CD4 cell count.
- ┆ Individuals are considered to have limited immune deficit if their CD4 count is 200-500, with a low or undetectable viral load.
- ┆ Individuals are considered to have severe immune compromise if their current CD4 count is less than 200 and they have detectable viral load, if they have a history of AIDS-defining illness, or if they have symptomatic HIV infection.

For the most part, HIV-infected travelers are on ongoing, modern antiretroviral regimens tailored to completely suppress viral replication to undetectable levels. For travelers who have been on HAART, the "reconstituted" CD4 count (not the lowest level before starting HAART) will be considered when making decisions regarding vaccines and medications that might be necessary. Usually it is best to wait for about 3 months after the CD4 count has been reconstituted before receiving any immunizations.

Susceptibility to Infections

Travelers with symptomatic HIV are at risk for increased severity of some diseases, such as malaria, travelers' diarrhea, TB, Chagas' disease, and visceral leishmaniasis.

Malaria

Malaria prevention is especially important for immunocompromised individuals. Although malaria does not appear to pose a greater risk for HIV-infected travelers (except pregnant women with HIV infection), antimalarial drug interactions and adverse events must be considered.

- | Doxycycline and chloroquine are the least likely prophylactic antimalarials to have interactions with HAART.
- | Mefloquine is the most likely to have potential interactions with antiretroviral regimens. It may be prudent to avoid mefloquine if possible.
- | The extremely cautious patient on a protease-inhibitor or on a NNRTI (non-nucleoside reverse transcriptase inhibitor) might want to avoid atovaquone-proguanil, if possible.
- | Malaria treatment regimens that include artemisinin or quinine are much more likely to have safety or efficacy problems, and patients on antiretrovirals need to seek care by an experienced infectious diseases specialist, if any possibility of malaria arises.

Travelers' Diarrhea

During travel to developing countries, HIV-infected persons who are immunocompromised have a greater risk for severe illness from food- and water-borne diseases. Therefore it is particularly important that travelers observe strict food and water precautions.

- | To prevent cryptosporidium, an infection that is resistant to chlorination or iodination, travelers should drink only beverages that are commercially bottled, water that has been brought to a rolling boil for 1 minute, or filtered water (using filter pore size less than 1 micron).
- | To reduce the risk of cryptosporidiosis (or other diseases) from water swallowed during recreational water activities, travelers should avoid swallowing water when swimming in water that may be contaminated (e.g., with sewage or animal waste).
- | To reduce exposure to *Toxoplasma*, meat should be cooked thoroughly.

HIV-infected persons traveling to a developing country should carry an antibiotic for self-treatment in case diarrhea develops (e.g., ciprofloxacin, 500 mg twice daily for 3 to 5 days). Loperamide can also be used for treating mild diarrhea.

In certain circumstances (e.g., a brief period of travel to an area where the risk of infection is high and an individual is severely immune compromised), a health care provider may provide antibiotics to prevent travelers' diarrhea. Ciprofloxacin, norfloxacin, ofloxacin, and levofloxacin are most frequently used; 1 tablet is taken daily during travel and for 2 days after return. Those who are taking antiviral medications should remember that diarrhea can also be a result of HAART. A health care provider can explain how to best differentiate diarrhea caused by HAART from diarrhea caused by an infection that should be treated with an antibiotic.

Respiratory Infections

Bacterial pneumonia, influenza, and tuberculosis are also important risks. The risk of tuberculosis increases with duration of travel and degree of close contact with the local population in developing countries.

- | All persons should be vaccinated against influenza each year, and particularly before traveling.
- | Persons who plan to take a cruise more than 6 months after receiving the influenza vaccine should get another dose before departure.
- | Immune compromised individuals should also consider carrying self-treatment for influenza (e.g., Tamiflu) for a cruise or other high-risk travel, as their immune response to vaccination may be poor.
- | A pre- and posttravel tuberculin skin test is strongly recommended for travelers to areas with high or moderate risk of TB. This is especially important for those who will have close contact with local populations (for example, a health care worker or someone who will be staying in local homes).

Severe infection may occur after exposure to coccidioidomycosis, a fungal infection from contaminated soil in rural endemic areas of the southwestern U.S., northern Mexico, and parts of Central and South America.

Because of the risk of histoplasmosis (another fungal infection) in bat-infested caves, HIV-infected persons should avoid spelunking.

Insect-borne Infections

HIV-infected travelers should take extra precautions to prevent bites of insects that can transmit infections known to cause severe illness in immunocompromised persons—in particular, sandflies that cause visceral leishmaniasis and assassin or reduviid bugs that cause Chagas' disease. Scabies, a common skin parasite, can be a severe infection in HIV-infected travelers. Mosquitoes can carry diseases such as malaria, dengue, and yellow fever. See *Insect Precautions* for information on personal protective measures.

Medical Coverage and Access to Health Care

Travelers whose health should deteriorate while abroad may require intensive medical interventions and even evacuation. Therefore, medical and evacuation insurance to cover this possibility should be considered. If possible, HIV-infected travelers should identify a physician knowledgeable about HIV infection at the destination before departure. Local HIV/AIDS volunteer groups at the destination may be able to provide information on how to access a knowledgeable health care provider or HIV-related medications. A list of organizations involved in the counseling and care of HIV-infected individuals in a number of countries is available from the National AIDS Manual (www.aidsmap.com); click on "Find an HIV service."

Vaccination Requirements, Safety, and Efficacy

HIV-infected travelers must be aware of the benefits and risks of immunization for international travel.

- ▮ Those who are immune compromised are at increased risk of complications from vaccine-preventable infections.
- ▮ Depending on the degree of immune compromise, the immune response to vaccines may be lessened.

HIV-infected individuals should receive all immunizations as early as possible in the course of HIV disease; immunization after the initiation of HAART may be beneficial.

Killed or inactivated vaccines are generally safe whereas live vaccines may be harmful to immune-compromised individuals.

In general, individuals who are severely immune compromised should not receive live vaccines. Individuals who have "limited immune deficits" should discuss with a health care provider the safety and effectiveness of each vaccine, the level of actual risk at the destination, and the consequences of traveling without a particular immunization. Individuals who are not considered to be immune compromised generally can be immunized in the same manner as healthy travelers.

Live Vaccines

In general, AIDS- or HIV-positive individuals should avoid live vaccines; however, measles-containing vaccine, rotavirus vaccine (in infants), and chickenpox (varicella) vaccine can be given to some HIV-infected persons. Yellow fever vaccine and zoster vaccine can be given to some asymptomatic HIV-infected travelers with no evidence of immune compromise. Other live vaccines (e.g., BCG, intranasal influenza, oral polio, oral typhoid vaccines) should not be given.

Measles/mumps/rubella (MMR) vaccine should be given only to persons who are not severely immune suppressed. Travelers who cannot receive MMR vaccine due to severe immune suppression and who anticipate travel to an endemic area may be given immune globulin. Healthy close contacts should receive MMR vaccine, when indicated.

Chickenpox (varicella) vaccine: Some HIV-infected individuals may be able to receive this vaccine, depending on the type of immune deficiency present. Two doses are given 3 months apart. Healthy close contacts should receive chickenpox vaccine, when indicated.

Yellow fever vaccine: Whether or not an individual can receive yellow fever vaccine depends on the true risk of yellow fever at the destination and the degree of immune compromise. The HIV-infected traveler and his or her doctor must discuss the safety and effectiveness of the vaccine, given the traveler's health status.

- ▮ HIV-infected individuals can receive yellow fever vaccination if they are asymptomatic and have no evidence of immune suppression.
- ▮ Individuals should not receive yellow fever vaccine if they have AIDS or other symptoms of HIV infection with severe immune suppression.

Shingles vaccine (herpes zoster) should not be given to persons who are immune suppressed (or have a history of immune suppression), including HIV-infected persons with CD4 counts less than 200.

Inactivated Vaccines

Hepatitis A vaccines and/or immune globulin (IG) may be given if appropriate for the itinerary.

Hepatitis B immunization is recommended regardless of travel plans. HIV-infected persons may have an impaired response to hepatitis B vaccine.

Human papillomavirus vaccine (HPV) is recommended for certain age groups. Persons who are immune compromised may be at higher risk for conditions associated with HPV or may have a lower vaccine efficacy or immune response.

Inactivated influenza vaccine is recommended each year, and particularly before travel, for all persons 6 months and older, including HIV-infected persons. Quadrivalent inactivated influenza vaccine is preferred for most persons.

- Individuals who plan to take a cruise more than 6 months after receiving influenza vaccine should get a second dose before departure. (Influenza vaccine may not be effective in individuals who have advanced HIV or low CD4 count.)

Meningococcal conjugate vaccine (MCV4) is given routinely to adolescents aged 11-18 years regardless of HIV status; HIV-infected adolescents should receive 2 doses. Other persons with HIV aged 2-54 years who are being vaccinated against meningococcal disease for other indications should also receive 2 doses.

Pneumococcal vaccine of the appropriate formulation should be given. HIV-infected persons should receive both 13-valent pneumococcal conjugate vaccine (PCV13) and 23-valent pneumococcal polysaccharide vaccine (PPSV23).

- PCV13 is also recommended for all children aged 2-59 months and children aged 60-71 months with underlying medical conditions, including HIV infection. (A single dose of PCV13 may also be given to HIV-infected children aged 6-18 years.)
- PPSV23 is recommended after completion of the PCV13 series for HIV-infected persons aged 2-64 years.
- PPSV23 is recommended during pregnancy for HIV-infected women not vaccinated during the previous 5 years.

Tetanus, diphtheria, and pertussis (DTaP, Tdap, Td) vaccines should be up to date, and all persons 11 years and older should have had 1 dose of Tdap.

Injectable polio vaccine (IPV) is recommended for HIV-infected persons and their household contacts.

Injectable (inactivated) typhoid vaccine should be given to persons at risk for exposure to typhoid.

Japanese encephalitis vaccine may be given if appropriate for the itinerary.

Rabies vaccine (preexposure) may be given for rabies prevention, but immune response may be inadequate in HIV-infected individuals. Always seek immediate medical attention if exposure to rabies occurs or is suspected; additional rabies vaccine is required for treatment, even in those who have had the preexposure series.

Oral cholera vaccine is not available in the U.S. but is available in many other countries. When available, the *inactivated* oral cholera vaccine (Dukoral) is well tolerated in HIV-infected persons but optimal response may not be achieved in immune-compromised persons.

H. influenzae type b vaccine (Hib): Children aged 2-59 months routinely receive 4 doses as part of the childhood schedule in the U.S.; HIV-infected children aged 5-18 years should also receive Hib vaccine.

Human papillomavirus vaccine (HPV) is recommended for certain age groups (see *Human Papillomavirus*). Persons who are immunocompromised may be at higher risk for conditions associated with HPV or may have a lower vaccine efficacy or immune response.

TB screening should be a part of routine medical care, and particularly before and after prolonged international travel to high-risk areas.

Immunizing Children Infected with HIV

For children infected with HIV, certain changes from the normal childhood immunization schedule are recommended:

- MMR vaccine or any measles-containing vaccine should not be given to severely immunocompromised children. HIV-infected children without severe immunosuppression should receive their first dose of MMR as soon as possible upon reaching their first birthday. The second dose can be given as soon as 1 month later, rather waiting until school entry.
- PCV13 should be given to all children aged 2-59 months, and a single dose of PCV13 may be given to HIV-infected persons aged 6-18 years. PPSV23 is recommended for HIV-infected children after completion of the PCV13 series.

- | Varicella vaccine should be considered for HIV-infected children who are asymptomatic or mildly symptomatic. Two doses are given 3 months apart.
- | The combination measles, mumps, rubella, and varicella vaccine (MMRV) should not be given to children with HIV or AIDS.
- | Influenza vaccine (injectable) should be given yearly to all HIV-infected children 6 months and older.
- | HIV-infected adolescents aged 11-18 years should receive a 2-dose primary series of MCV4. Children aged 2-10 years with HIV who are being vaccinated against meningococcal disease should receive 2 doses of MCV4.
- | HIV-infected children should receive *H. influenzae* b (Hib) vaccine, hepatitis A vaccine, and hepatitis B vaccine.
- | HIV-infected infants should receive rotavirus vaccine according to the routine schedule.
- | Children with HIV may have a reduced antibody response to human papillomavirus vaccine (HPV).

HIV-positive children should have a tuberculin test as part of their routine medical care and especially before and after travel to risk areas. BCG vaccine is not recommended for HIV-infected persons in the U.S.

Summary: Advice for HIV-Infected Travelers

Infected travelers should:

- | Discuss the issues and risks of travel with a health care provider
- | Receive any necessary vaccines at least 6 to 8 weeks before departure
- | Know their most recent CD4 cell count, viral load, and degree of immune compromise.
- | Carry a letter summarizing their clinical status and medical history
- | Obtain a name of an HIV-knowledgeable physician at the destination
- | Check anonymously with consulates and/or embassies for any travel restrictions for HIV-infected persons at an intended destination
- | Check U.S. State Department website: travel.state.gov/travel/tips/brochures/brochures_1230.html
- | Contact LGBT-oriented travel agencies and publications for information regarding countries with discriminatory practices targeting individuals carrying antiretrovirals
- | Purchase a flexible, fully refundable ticket or trip cancellation insurance and appropriate medical insurance with provision for emergency assistance
- | Adhere closely to food and drink precautions and insect precautions
- | Learn about common illnesses associated with travel and appropriate treatment measures for such problems as diarrhea and sinusitis.
- | Consider taking a daily preventive antibiotic for travelers' diarrhea for high-risk travel of less than 4 weeks' duration

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