

Travelers with HIV

Traveler Summary

Key Points

- Travelers with HIV should weigh the benefits of travel against any potential health risks, including degree of infection risk according to viral load and CD4 count; travelers with undetectable viral loads generally have no increased risk of infection.
- Travelers with HIV should:
 - Carry records or documentation on a phone app describing treatment, recent CD4 counts and viral load, and history of infections.
 - Research discrimination issues at foreign ports of entry and at destination(s) for harassment or exclusion for carrying antiretroviral medications. Certain longer-stay visas require advance HIV testing, and positive tests will result in visa denial.
 - Be stable on antiretroviral therapy for 3 months before travel and up to date with all vaccines recommended for all nontraveling persons with HIV. Newly diagnosed persons with CD4 counts below 200 or a positive viral load should consider delaying travel plans.
 - Ensure that a provider checks for interactions between prescribed travel medications and maintenance antiretrovirals at hiv-druginteractions.org.
- Travelers with HIV and any degree of weakened immunity should observe food, beverage, and insect precautions and use malaria chemoprophylaxis diligently if applicable. Discuss with a health care provider the use of antibiotic for self-treatment or prophylaxis of travelers' diarrhea.
- Travel-related vaccines may stimulate lower immune responses and may not be protective against real threats at the destination. Killed vaccines are safe; live vaccines (including yellow fever) may be considered in travelers with HIV without a severely weakened immune system.

Introduction

Persons with HIV may or may not have a weakened immune system. Currently, most travelers with HIV are taking modern antiretroviral drugs that completely suppress viral replication to undetectable levels. Travelers with HIV and no replicating virus are not thought to have a weakened immune system (unless CD4 count is severely diminished) and are approached the same as an uninfected traveler. However, travelers with HIV and detectable viral levels and diminished CD4 counts are considered to have a weakened immune system and may have increased risk related to travel.

Pretravel Planning

Travelers with HIV should weigh the benefits of travel against any potential health risks, including the degree of infection risk according to viral load and CD4 count; travelers with undetectable viral loads generally have no increased risk of infection. Travelers with HIV and a weakened immune system must pay attention to a number of issues when preparing for international travel, such as:

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

A pretravel assessment is recommended and should include risks associated with the specific itinerary, current antiretroviral therapy, current viral load and CD4 count, medical history, and physical examination. Ideally, travelers should be on stable antiretroviral therapy (ART) for 3 months before travel and up to date with all vaccines recommended for all nontraveling persons with HIV. Newly diagnosed persons with CD4 counts below 200 or a positive viral load should consider delaying travel plans. The "reconstituted" CD4 count (not the lowest level before starting ART) will be considered when making decisions regarding vaccines and medications that might be necessary.

Restrictions for Crossing International Borders

Many countries, particularly those in Eastern Europe and the Middle East, have HIV-related restrictions in place. Research discrimination issues at foreign ports of entry and at destination(s) for harassment or exclusion for carrying antiretroviral medications. Certain longer-stay visas require advance HIV testing, and positive tests will result in visa denial.

These regulations apply mostly to persons applying for long-term entry permits (e.g., students and workers), 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 infected with HIV.

Because countries do not have to report HIV test requirements to the World Health Organization or to any other central reporting agency, travelers should contact the embassy or consulate of destination countries before departure and ask anonymously about HIV test requirements or other possible health-related visa requirements (vaccinations, tuberculosis [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 testing to be performed on arrival, needles and syringes may not be sterile.

Malaria

Malaria prevention is especially important for persons with a weakened immune system. Although malaria does not appear to pose a greater risk for travelers with HIV (except pregnant women with HIV), antimalarial drugs taken with older antiviral drugs have greater potential for interaction than with newer antiviral drugs. Newer combinations (such as integrase inhibitor/nucleoside reverse transcriptase inhibitor [NRTI] combinations) have no significant interactions. Ensure that a provider checks for interactions between prescribed travel medications and maintenance antiretrovirals (other than integrase inhibitor combinations) at hiv-druginteractions.org. Preexposure prophylaxis with Truvada does not interfere with antimalarials.

Tafenoquine's potential for drug interaction with ART is unknown and should be avoided if possible. Malaria treatment regimens that include artemisinin, lumefantrine, or quinine are much more likely to have safety or efficacy problems, and persons 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, persons with HIV and any degree of weakened immunity have a greater risk for severe illness from food- and water-borne diseases and should observe food and beverage precautions and strict hand hygiene (frequent, thorough handwashing).

- To prevent cryptosporidium (a chlorine- and iodine-resistant infection), travelers should only drink 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 ingesting 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.

Persons with HIV who are traveling to a developing country should be prepared to self-treat travelers' diarrhea. For mild to moderate diarrhea, loperamide or bismuth subsalicylate can control the symptoms. For moderate to severe diarrhea, an antibiotic (azithromycin) may improve the course of illness. Persons with a severely weakened immune system should have a lower threshold for initiating self-treatment than those without a weakened immune system.

In certain circumstances (e.g., a brief period of travel to an area where the risk of infection is high and an individual has a severely weakened immune system), a health care provider may provide antibiotics to *prevent* travelers' diarrhea. Because diarrhea is a frequent complication of ART, those taking ART should discuss with their health care provider how to best determine if their diarrhea is due to an infection.

Respiratory Infections

Bacterial pneumonia, influenza, and TB are also significant risks for the traveler with HIV and a weakened immune system. The risk of TB increases with duration of travel and degree of close contact with the local population in developing countries, particularly in sub-Saharan Africa and states of the former Soviet Union; health care providers or persons staying in local homes are at greater risk. To prevent respiratory infections, the following measures should be considered.

- All persons should be vaccinated against influenza each year, and particularly before traveling.

- If a cruise is to be undertaken more than 6 months after influenza vaccination, another dose should be considered before departure.
- Travelers with HIV should also consider carrying antiviral self-treatment for influenza (e.g., Tamiflu or Xofluza) for high-risk travel (e.g., cruises) because the immune response to vaccination may be poor.
- Travelers with HIV and a weakened immune system should have TB screening done routinely as well as before and after international travel to risk areas.
- Risk of histoplasmosis (fungal lung infection) exists in bat-infested caves; travelers with HIV and a weakened immune system should avoid spelunking.
- Severe infection may occur after exposure to coccidioidomycosis, a fungal infection from contaminated soil in rural endemic areas of the southwestern US, northern Mexico, and parts of Central and South America.

Insect-borne Infections

Travelers with HIV should take extra precautions to prevent bites of insects that can transmit infections known to cause severe illness in persons with a weakened immune system, in particular, sand flies that cause visceral leishmaniasis and assassin or reduviid bugs that cause Chagas' disease. Visceral leishmaniasis is an opportunistic infection when CD4 is less than 200 and develop from primary cutaneous leishmaniasis. Scabies, a common skin parasite, can cause a severe infection in travelers with HIV. Mosquitoes can carry diseases such as malaria, dengue, and yellow fever. See *Insect Precautions* for information on personal protective measures.

Other Infectious Disease Risks

Sexually transmitted infections may have a more severe course (e.g., syphilis) compared to HIV negative individuals; co-infection increases risk of HIV transmission to partners. Fungal infections may be associated with severe disease in travelers with HIV; several have distinct geographic exposure risks in Southeast Asia, South America, and tropical/subtropical Americas.

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 insurances should be considered. If possible, before departure travelers with HIV should identify a physician at the destination who is knowledgeable about HIV infection. Carry records or documentation on a phone app describing treatment, recent CD4 counts and viral load, and history of infections. Local HIV 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 persons with HIV in a number of countries is available from the National AIDS Manual (www.aidsmap.com); click on "Find an HIV service."

Prevention

Vaccination Requirements, Safety, and Efficacy

Travelers with HIV must be aware of the benefits and risks of vaccination for international travel.

- Those who have a weakened immune system are at increased risk of complications from vaccine-preventable infections.
- Travel-related vaccines may stimulate lower immune responses and may not be protective against real threats at the destination.
- Killed or inactivated vaccines are safe; live vaccines (including yellow fever) may be considered in travelers with HIV without a severely weakened immune system.
- Persons with HIV should receive all vaccinations as early as possible in the course of HIV disease; vaccination after the initiation of ART may be beneficial.
- HIV replication increases temporarily after vaccination but does not have detrimental long-term effects on survival.
- Individuals who are not considered to have a weakened immune system can generally be vaccinated in the same manner as healthy travelers.

Live Vaccines

In general, persons with HIV should avoid live vaccines; however, measles-containing vaccine, rotavirus vaccine (in infants), and chickenpox (varicella) vaccine can be given to travelers with HIV and normal immunity. Yellow fever vaccine and live attenuated

zoster vaccine can be given to some asymptomatic travelers with HIV and no evidence of a weakened immune system. Other live vaccines (e.g., BCG, intranasal influenza, oral polio, oral typhoid vaccines) should not be given.

Cholera vaccine is not absorbed into the body, but data on use in persons with HIV are lacking.

Measles/mumps/rubella (MMR) vaccine should be given only to persons with HIV who are symptom free and do not have a severely weakened immune system. Travelers with a severely weakened immune system 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 persons with HIV 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 weakened immunity. The traveler with HIV and their health care provider must discuss the safety and effectiveness of the vaccine, given the traveler's health status.

- Persons who are symptom free and have no evidence of a weakened immune system can receive yellow fever vaccination.
- Persons with symptoms of HIV, severely weakened immune system, or history of AIDS-defining illness should not receive yellow fever vaccine.

Shingles (herpes zoster) live vaccine (Zostavax) should not be given to persons with a weakened immune system, including those with CD4 counts less than 200. Recent data indicate that administering 2 doses of Zostavax 6 weeks apart is safe in those with CD4 count \geq 200 and low viral load and may be considered in this population. Current US guidelines do not recommend herpes zoster vaccination for persons with HIV who are younger than 50.

Inactivated Vaccines

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

Hepatitis B vaccination is recommended regardless of travel plans. Persons with HIV may have an impaired response to hepatitis B vaccine. Use of a double-dose regimen of hepatitis B vaccine should be discussed with the provider especially if CD4 counts are low. To test the effectiveness of the vaccine, blood should be drawn 1 month after the third dose.

Human papillomavirus vaccine (HPV) is recommended for all persons with HIV aged 9-26 years and may be considered for persons aged 27-45 years. Persons who have a weakened immune system 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 persons with HIV.

- 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; adolescents with HIV should receive 2 doses. Other persons with HIV aged 2 years and older who are being vaccinated against meningococcal disease for other indications should also receive 2 doses.

Pneumococcal vaccine of the appropriate formulation should be given. Persons with HIV 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 children with HIV aged 6-18 years.)
- PPSV23 is recommended after completion of the PCV13 series for persons with HIV aged 2-64 years.
- PPSV23 is recommended for pregnant women with HIV who were 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 persons with HIV 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 persons with HIV. 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 US but is available in many other countries. When available, the *inactivated* oral cholera vaccine (Dukoral) is well tolerated in persons with HIV but optimal response may not be achieved in persons with a weakened immune system.

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

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

Shingles (herpes zoster) recombinant vaccine (Shingrix) may be given to all persons 50 years and older, including those with a weakened immune system; no efficacy data populations with weakened immune systems are available. Current US guidelines do not recommend herpes zoster vaccination for persons with HIV who are younger than 50 years.

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

Vaccinating Children with HIV

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

- MMR vaccine or any measles-containing vaccine should not be given to children with a severely weakened immune system. Those without a severely weakened immune system 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 than 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 children with HIV aged 6-18 years. PPSV23 is recommended after completion of the PCV13 series.
- Varicella vaccine should be considered for those who are symptom free or have mild symptoms. Two doses are given 3 months apart.
- The combination measles, mumps, rubella, and varicella vaccine (MMRV) should not be given to children with HIV.
- Influenza vaccine (injectable) should be given yearly to all children 6 months and older.
- Children with HIV 2 years and older should receive 2 doses of meningococcal vaccine.
- Children with HIV should receive *H. influenzae* b (Hib) vaccine, hepatitis A vaccine, and hepatitis B vaccine.
- Infants with HIV should receive rotavirus vaccine according to the routine schedule.
- Children with HIV may have a reduced antibody response to human papillomavirus vaccine (HPV).

Children with HIV should have a tuberculin test as part of their routine medical care, and particularly before and after travel to risk areas. BCG vaccine is not recommended for persons with HIV in the US