

## **The travel medicine and immunization requirements of a person traveling from a developed country to a developing country - some examples with explanations**

### **Travel medicine**

Travel medicine is a branch of medicine that deals with the prevention and treatment of medical problems in international travelers.

The Tropical and Travel Medicine activity is aimed at the prevention and treatment of diseases related to travel, in particular infectious diseases. These activities are generally integrated into the Infectious Diseases Department of the Central Hospital. This division not only deals with travel medicine, but also brings together all areas related to infectious diseases: physician consultation in infectiology, microbiology, infection prevention and control (or Hospital Hygiene or Hospital Epidemiology), Screening for HIV/AIDS and other sexually transmitted diseases, and control of infectious diseases.

### **Introduction**

Travel preparation for international travelers, especially from developed to developing countries, should be handled on risk management principles. Precautionary strategies and medical interventions should be based on the travel itinerary, pre-existing health factors, and the specific behaviors of the travelers. A structured approach to patient interaction provides a general framework for effective counseling is essential. Vaccine-preventable diseases play an important role in travel-related illnesses, and their impact is not limited to exotic diseases in developing countries. Therefore, a pretravel immunization booster is an ideal time to refresh age-appropriate vaccinations and protect against diseases that pose additional risks to travelers and may be related to their destinations or activities. This review focuses specifically on the indications for each travel-related vaccine, as well as a structured summary and graphics showing the geographic distribution of major travel-related diseases and highlighting high-risk destinations and behaviors. Dosing, route of administration, need for booster shots, and possible accelerated schedules for pretravel vaccinations are to be considered by the Physician and advisable to the Patient's intended travel. Different underlying diseases and medications result in varying degrees of immunodeficiency, and there are still many unknowns in this area. Recommendations for immunization of immunocompromised travelers are less well established than for other categories of travelers. With this assessment, I hope to provide people traveling to developing countries from developed countries with some relevant information about the concept of preventive immunization or vaccination.



**FIGURE 1: TAKEN FROM THE FOLLOWING WEBSITE AND VIEWED ON MAY 2023, <TRAVEL HEALTH > RAFFLES MEDICAL GROUP>**

*This can be a descriptive illustration of the fact that developing countries are more vulnerable to disease than developed countries.*

**Immunizations**

When preparing to travel to a developing country, make sure you and your children have received all routine vaccinations. The routine vaccinations include seasonal influenza, tetanus-diphtheria-pertussis (TDP or Tdap), Measles-Mumps-Rubella (MMR), Varicella (chickenpox) for children, and Zoster (shingles) for adults, Pneumococcus (PCV13 or PPSV23), Hepatitis A and B, Polio, Meningococcal, Haemophilus influenzae type b (Hib) - on children or adults with immune system problems, and Rotavirus ( for young children only). Depending on your itinerary and the specifics of your medical history, you may also need vaccinations for crossing international borders. There are 3 vaccines that are required for entry and exit to certain countries. These 3 vaccines include: Polio vaccine a one-time booster is currently required for departure after a stay of more than 4 weeks in Afghanistan, Laos, Nigeria, and Pakistan. This list of countries is subject to change frequently. Meningococcal vaccine a single dose of ACWY quadrivalent meningococcal vaccine is required for entry into the Kingdom of Saudi Arabia for the Hajj. A yellow fever vaccination is required by many countries for entry if you are traveling from countries with a yellow

fever risk. [1,2,3] Also necessary include the typhoid vaccine (available in both oral and injectable forms), Japanese encephalitis vaccine, pre-exposure rabies vaccine, and Tick-borne encephalitis. [4] The required vaccinations can also be proven by an international vaccination certificate (yellow card). This must be presented when someone travels to a country that requires proof of vaccination status for entry.

### **Intestinal diseases**

Intestinal diseases are transmitted by contaminated water and food. For example, Typhoid fever is caused by the bacterium *Salmonella typhi*. The infection causes fever and bloody diarrhea. For the prevention of typhoid, travelers can get an injection or an oral vaccination. Hepatitis A is a viral infection that can cause liver disease and can be transmitted through food and water contaminated with feces. Getting vaccinated against hepatitis A is also possible. [5,6]

### **Yellow fever**

Yellow fever is caused by a flavivirus transmitted by an *Aedes* or *Haemogogus* mosquito. The illness can range from mild to severe. Early symptoms include flu-like symptoms, but severe courses with jaundice (yellowing), high fever, hemorrhagic bleeding, shock, and organ failure occur in 15% of cases. Untreated, severe yellow fever can be fatal. Thankfully, yellow fever can be prevented by vaccination. Yellow fever vaccine is given as a single dose to people at least 9 months of age who are traveling to or living in high-risk areas. [7]

### **Japanese Encephalitis**

Japanese encephalitis (JE), a potentially fatal disease, has high infection rates in countries such as Bangladesh, Cambodia, China, Indonesia, Japan, Nepal, and Thailand. The symptoms can range from a mild flu-like illness to fever, headache, and vomiting. Infection can cause inflammation of the brain (encephalitis), which can lead to coma and paralysis. A vaccine is available to prevent JE. It is licensed for children and adults 2 years of age and older. This vaccine is recommended for travelers who will be in areas where JE is common for more than one month or for travelers who will be in rural or agricultural areas for less than one month. [8]

### **Respiratory viruses**

Respiratory viruses range from the common cold to more serious infections. All travelers should take general precautions to protect themselves from respiratory viruses. It is prudent and advisable to keep all immunizations up to date, including seasonal influenza vaccination.

Bird flu, also called avian influenza, is caused by avian (bird) types of influenza A virus. Flu viruses are commonly found in wild birds, especially waterfowl, and can also cause outbreaks in domestic poultry such as chickens, ducks, and geese. The fifth and largest epidemic of H7N9 to date was reported in China in May 2017. Because the risk is currently considered low, however, neither WHO nor CDC has imposed travel restrictions. There is currently a vaccine available to prevent H5N1. No vaccine is available for H7N9. [9]

### **Coronavirus- Disease 2019 (COVID-19)**

Finally, from last experience 2019 Coronavirus Disease (COVID-19). SARS associated coronavirus 2 (SARS-CoV-2), formerly also called 2019 Novel Coronavirus (2019-nCoV), is a newly identified coronavirus responsible for an outbreak of coronavirus disease (called COVID-19) that began in Wuhan City, China, in December 2019. SARS-CoV-2 infection causes respiratory illness that can range from no or mild symptoms to respiratory failure and death. It is believed that COVID-19 is transmitted from person to person through infected droplets. The symptoms of COVID-19 occur within 2 to 14 days of exposure and include fever, cough, and shortness of breath. It seems that the risk of more severe COVID-19 disease is higher in the elderly or people with chronic health problems. There is currently no vaccine to prevent COVID-19. Avoiding contact with the virus, including avoiding travel to known outbreak areas, is the best way to prevent this infection. Currently, CDC recommends against travel to China and that travelers from China be tested and isolated for up to 14 days. This situation is rapidly evolving.

## Conclusion

Immunizations are one way to protect against certain infections. Vaccines provide immunization to fight common diseases across the board. These contain tiny amounts of killed or weakened viruses, bacteria, or other substances that prepare your immune system to fight future infections. Vaccines are safe and effective and are especially important when traveling.

Because of widespread vaccination and other public health measures, many infectious diseases have become rare. This is not the case in all countries, however. While traveling, there is a risk of infectious diseases that are very rare in developed countries. Such infections can cause serious illness even in normally healthy people. They can sometimes even be fatal. Returning to a developed country with an infectious disease can also put other people at risk. Expectant mothers, infants, young children, the elderly, and people with weakened immune systems are especially at risk when traveling. In some countries, vaccination against certain diseases is required before entry. Before traveling it is recommended that you see a doctor at least 6 weeks (preferably 12 weeks) before traveling to a developing country. This will give travelers to the tropics' immune system time to respond to the required vaccines.

Current levels of tourism mean that travel medicine consultation takes place in the general practitioner's office, allowing for low-threshold and decentralized consultation that takes previous medical history into account.

For most GPs, travel medicine consultation is an important part of their work. Medical travel files, WEB research, and continuing medical education keep the medical practice assistants and the general practitioners professionally "up to date".

The travel medicine consultation provides travelers with answers to the following questions: *Am I fit to travel? Are vaccinations necessary? Do I need to protect myself against malaria? Which items do I pack in my first-aid kit? Recommendations for specific countries? Do I need a yellow fever vaccination? Make sure to take the vaccination book (possibly your benefit booklet), the exact travel and flight schedule as well as cash (for services not covered by health insurance) with you.*

After your trip, the travelers are advised to report the incidence of diarrhea, fever, and skin diseases. Remember to make aware of the trip and if travelers have a fever after a stay in the tropics, immediately arrange to see a doctor. This is also suited for the occurrence of flu-like illnesses, especially if travelers have been in countries with high malaria transmission.

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