

Transplant and Travel

i

Travel medicine advice for international travel after kidney transplant

Receiving a kidney transplant has a positive effect on most people's lives, particularly for those who have been receiving long-term dialysis.¹ It often gives the recipient and their family the freedom to pursue activities that would have been difficult whilst unwell or on dialysis. The option of travelling overseas whether for a holiday, business, education, or to visit friends and relatives may again be possible.

The choice of travel destination need not be limited to major cities, resorts or the more industrialised countries of the world either. With careful planning and advice from experts in both kidney transplant and travel medicine, the world could again become your 'oyster'.

High-Risk Destinations

- Africa, Asia, Central and South America, Middle East, Pacific Islands
- Developing countries
- Tropical regions

High-Risk Activities

- Rural village home-stays, budget accommodation
- Eating or drinking from markets or roadside stalls
- Caving, dirt biking, eco-adventure tourism, excavating.

Please discuss all travel plans with your doctor, kidney specialist or transplant surgeon.

Pre-Travel Health Risk Assessment

An important part of pre-travel preparation is the health risk assessment, especially for people with pre-existing medical conditions travelling to high-risk destinations or engaging in high-risk activities.³ Whether you are planning an adventure safari in Africa, a visit to friends and relatives in India, or a budget holiday through South America, it is highly recommended you have a full assessment by a travel medicine expert along with your kidney doctor or transplant surgeon six months before you go.^{2,4}

After the assessment you should receive individualised advice regarding:

- vaccinations
- food and water safety
- information on signs and symptoms of common illnesses
- signs of anti-rejection drug toxicity
- plans and prescriptions for self-treatment of common travel illnesses
- injury prevention
- travel insurance and
- where to seek medical attention.

What Are The Travel Risks For Transplant Recipients

The anti-rejection medications taken to prevent your body rejecting the transplanted kidney lower the immune system. They can also increase your chance of becoming ill from travel-related infectious diseases such as travellers diarrhoea, respiratory infections, skin and other infections.⁵ The symptoms of any illness may be more severe in someone whose immune system is suppressed. Some of the medications for disease prevention and treatment, such as vaccinations, malaria tablets, antibiotics and even anti-altitude tablets need to be carefully prescribed.

Travel Vaccinations

The need for pre-travel vaccinations will depend on your destination, time since transplant, and the risk of catching a particular disease.⁶ The risk of damage to your transplanted kidney by each vaccine will also be considered.⁶ Live vaccines should not be given to anyone on immunosuppressive therapy due to the risk of infection and organ rejection.⁷ Inactivated vaccines on the

other hand are safe, but you may need booster doses in order to achieve optimum protection.⁷ The vaccine will usually work better six months after transplant when anti-rejection drug doses have been reduced.⁷ If you are currently awaiting transplant and plan to travel in the future, then you should try to receive all vaccinations well before your transplant operation.⁷

Live Vaccines – Not Safe After Transplant

- MMR – measles, mumps, rubella
- Varicella – chicken pox
- BCG – tuberculosis
- Yellow Fever
- Oral Typhoid
- Oral Polio – Sabin

Vaccine Recommendations

Vaccine	Schedule	Recommendations
Influenza	Annually	Give at least one month after transplant and prior to annual influenza season. Avoid nasal vaccine including household contacts ⁸
Pneumococcal	Once every 5 years	Recommended for all travellers
Diphtheria/Tetanus/Pertussis'	Once every 10 years	Consider checking diphtheria blood titre first
Hepatitis A	0 and 6-12 months, check titres 4 weeks later	Especially if travelling to high-risk areas. If non-immune or travelling within 2 weeks give immunoglobulin.
Hepatitis B	0,1,6 month + booster if HBsAb <10mIU/ml	Ideally vaccinate before transplant. Check surface antibody levels (HBsAb) annually.
Japanese Encephalitis	0 and 28 days + booster after 1 year if continued or recurrent exposure	Recommended for prolonged or intense exposure in endemic areas during transmission season.
Meningococcus	Once + booster every 5years if continued or recurrent exposure	Recommended for travel to meningitis belt. Required for Hajj and Umrah.
Rabies	0,7,28 days + check titres	Recommended for travel with high risk of animal exposure. May still need human rabies immunoglobulin after exposure.
Typhoid (Inactivated Vi)	Once + booster every 2 years - use only Vi polysaccharide	Avoid live oral vaccine. Recommended for travel to areas where there is an increased risk
Polio (Inactivated - IPV)	Once IPV booster, check titres	Recommended for travel to areas where polio cases are still occurring. Avoid oral polio vaccine (OPV).
Measles Mumps Rubella (MMR)	Avoid	Give prior to transplant if required. Appropriate for contacts if required.
Varicella/Zoster	Avoid	Appropriate for contacts if required. Give prior to transplant if required.
Yellow fever	Avoid	Document exemption where required. Appropriate for contacts if required. Give prior to transplant if required.

Adapted from Rosen²

Medication Issues

Many of your anti-rejection medications may interact with the medicines used to treat traveller's diarrhoea, respiratory and fungal skin infections, and altitude sickness. In addition, many of the tablets used for malaria prevention can lead to transplant drug toxicity.

Careful planning and prescribing needs to take place well before you travel as you may need to trial some medications first and have your blood drug levels checked. You will need to carry an adequate supply of all medications and have a plan for when you travel across time zones.

This should be discussed with your doctors before you travel.

Malaria Prevention

Many anti-malaria tablets will increase the blood levels of anti-rejection medications such as cyclosporine and tacrolimus, and could lead to toxic levels that may damage your transplanted kidney.

There are a number of effective anti-malaria medications to choose from:

- ✓ Atovaquone/Proguanil (safe)
- ✗ Mefloquine, Doxycycline, Chloroquine, Primaquine (may increase anti-rejection drug [CNI] levels)

Which medication is best for you will depend on a number of things:

1. Your travel destination
2. Patterns of drug resistance in that area
3. The risk of drug interactions and side effects.

Of the five main anti-malarials, only Atovaquone/Proguanil (Malarone) is not reported to increase cyclosporine and tacrolimus levels.

Malaria Prevention

- Use mosquito repellent with >50% DEET
- Use permethrin impregnated bednets
- Wear long sleeve, long leg, loose light clothing
- Avoid being outside when mosquitos are feeding
- Stay in accommodation with screened windows and doors
- Take appropriate malaria prevention medication:

Travellers Diarrhoea

Traveller's diarrhoea is the most common disease in travellers with its impact being more severe and more serious in people with suppressed immune systems.⁹ It is important to stay well hydrated (with oral rehydration solutions) during the illness as dehydration can lead to anti-rejection drug toxicity.⁹ If the diarrhoea persists the opposite may occur where anti-rejection drugs are not absorbed and the blood levels fall putting the transplanted kidney at risk of rejecting.

Self-treatment with fluoroquinolone antibiotics such as ciprofloxacin or norfloxacin should occur after 3-4 watery/loose bowel motions. If travelling in areas where there is resistance to these drugs (eg., South East Asia) then azithromycin or rifaximin can be prescribed.⁷ If the traveller's kidney function is ordinarily reduced then the dose of antibiotic (fluoroquinolones) may need to be reduced.⁷ Antimotility agents such as loperimide (Gastrostop) should be used with caution.

Travellers Diarrhoea Definition

- 3 loose stools in 8 hours or
 - or 4 loose stools in 24 hours
- PLUS 1 of:
- nausea, vomiting, urgency
 - abdominal cramps, fever

Other Illnesses

Respiratory infections are the second most common traveller's illness followed by urinary infections, simple skin infections and vaginal yeast infections.¹⁰ Such infections can be treated early if you have the correct antibiotics, antifungals or other medications on hand.⁹ Your travel medicine doctor, kidney doctor, or your GP can provide prescriptions and instructions on when and how to use these medications.

For travellers venturing to high altitudes (>2500m above sea level), knowing the signs and symptoms of acute mountain sickness (headaches, nausea, vomiting, dizziness) is important.⁷ If these symptoms continue you may need to descend. Medications such as Acetazolamide may prevent or lessen symptoms but could also cause toxicity of your anti-rejection medications, so should be used with caution.²

Sun protection should not be forgotten given the increased risk of skin cancer in transplant recipients, therefore, either sun avoidance or sunscreen lotions applied and protective clothing worn.¹⁰

In Case of Emergency

Prior to departure you and your treating doctors should identify the nearest transplant or renal service to your travel destination. A full list of medications and medical history should always be carried.

All international travellers should consider some form of travel insurance for the unexpected incident which may require urgent evacuation.

Transplant Australia can direct people who have undergone organ transplant to insurance companies that recognise their specific insurance needs.¹¹

Additional Travel Information

- Centres for Disease Control and Prevention. Traveller's Health. Website: <http://wwwnc.cdc.gov/travel>
- Centres for Disease Control and Prevention. Traveller's Health. Yellow Book. Website: <http://wwwnc.cdc.gov/travel/page/yellowbook-home>
- International Society of Travel Medicine. Website: <http://www.istm.org>
- Kidney Health Australia. Dialysis and Travel. Website: <http://www.kidney.org.au/your-kidneys/support/dialysis/dialysis-and-travel>
- National Kidney Foundation. Have Transplant. Will Travel: 10 Tips for Transplant Recipients. Website: <https://www.kidney.org/transplantation/transaction/TC/summer14/10-Tips-for-Transplant-Recipients>
- World Health Organisation. International travel and health. Website: <http://www.who.int/ith/en>

For more information about Kidney or Urinary health, please contact our free call Kidney Health Information Service (KHIS) on 1800 454 363.

Or visit our website kidney.org.au to access free health literature.

This is intended as a general introduction to this topic and is not meant to substitute for your doctor's or Health Professional's advice. All care is taken to ensure that the information is relevant to the reader and applicable to each state in Australia. It should be noted that Kidney Health Australia recognises that each person's experience is individual and that variations do occur in treatment and management due to personal circumstances, the health professional and the state one lives in. Should you require further information always consult your doctor or health professional.

Kidney Health Australia gratefully acknowledges Michele Harvey (Nurse Practitioner, Department of Health/North West Hospital and Health Service, Queensland Government) as the author of this material.



If you have a **hearing or speech impairment**, contact the National Relay Service on **1800 555 677** or **relayservice.com.au**

For all types of services ask for 1800 454 363

References

1. Kidney Health Australia. Kidney Transplantation. 2015; <http://kidney.org.au/about-us/resources-library/fact-sheets>. Accessed September 28, 2015.
2. Rosen J. Travel medicine and the solid-organ transplant recipient. *Infectious disease clinics of North America*. 2013;27(2):429-457.
3. Yung A, Leder K, Torresi J, et al. *Manual of Travel Medicine*. 3rd ed. Melbourne: IP Communications; 2011.
4. Kotton C, Ryan E, Fishman J. Prevention of infection in adult travelers after solid organ transplantation. *American Journal of Transplantation*. 2005;5:8-14.
5. Boggild KA, Sano M, Humar A, Gilman M, Salit I, Kain KC. Travel Patterns and Risk Behavior in Solid Organ Transplant Recipients. *Journal of Travel Medicine*. 2004;11(1):37-43.
6. Kotton C, Freedman D. Advising travelers with specific needs. *The Yellow Book: CDC Health Information for International Travel 2016*. Oxford: Centres for Disease Control and Prevention; 2015.
7. Aung AK, Trubiano JA, Spelman DW. Travel risk assessment, advice and vaccinations in immunocompromised travellers (HIV, solid organ transplant and haematopoietic stem cell transplant recipients): A review. *Travel medicine and infectious disease*. 2015;13(1):31-47.
8. Chadban S, Barraclough K, Campbell S, Clark C, Coates P, Cohny S. KHA-CARI guideline: KHA-CARI adaptation of the KDIGO Clinical Practice Guideline for the care of kidney transplant recipients. *Nephrology*. 2012;17:204-214.
9. Askling H, Dalm V. The medically immunocompromised adult traveler and pre-travel counseling: status quo 2014. *Travel medicine and Infectious Disease*. 2014;12:219-228.
10. Patel RR, Liang SY, Koolwal P, Kuhlmann FM. Travel advice for the immunocompromised traveler: prophylaxis, vaccination, and other preventive measures. *Therapeutics and Clinical Risk Management*. 2015;11:217-228.
11. Transplant Australia. Travel Insurance. 2015; <http://www.transplant.org.au/members/travel-insurance/>. Accessed 21 October, 2015.