

Medications and overseas travel

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GPs play an important role in advising their patients about travelling with medications. Issues to consider include restrictions and regulations on the types and amounts of medicines, providing appropriate documentation and managing medications when crossing time zones.

Travellers requesting pre-travel advice tend to focus on vaccinations but it is important for the travel health adviser to also provide appropriate advice in other areas such as medications. The traveller may already be taking medications to manage pre-existing conditions or may be advised to take some medications for prevention or treatment of illness while travelling. Specific advice regarding prevention and treatment of gastroenteritis, traveller's diarrhoea, malaria, venous thromboembolism, motion sickness, altitude sickness and jet lag is discussed in other articles in this travel health series. This article deals with general advice regarding medications and travel that GPs should consider discussing with overseas travellers, as relevant to their individual trip. Much of the advice also applies to domestic air travellers.

Legal issues for international travellers

There are several legal issues that international travellers and their medical advisers should be aware of, both when leaving and when re-entering Australia.

Restrictions apply to the type and amount of medications that can be taken out of Australia by a traveller or posted overseas. Travellers need to be aware that transgressing regulations in other countries may at best result in a delayed or missed flight. Some countries impose extremely harsh sentences, including imprisonment and, in some cases and countries, the death penalty for trafficking.

The International Narcotics Control Board (INCB) is an independent body established to monitor and support governments' compliance with international drug control treaties. The main thrust of the international agreements is that travellers are allowed to carry quantities of medications for personal use provided they carry a doctor's letter or prescription. Most countries have developed national regulations for drug control, these particularly applying to medications containing narcotics or psychotropic substances. Narcotics most commonly include opioids such as morphine and codeine, and psychotropics include medications used to treat mental disorders such as anxiety, depression and psychoses. Some countries also regulate epilepsy and Parkinson's disease medications, sedatives and antihistamines. The international guidelines and country regulations can be viewed at the INCB website (Box 1).

It is illegal to take PBS-subsidised medicine out of Australia unless it is for the personal use of the traveller or their companion (i.e. family or friend); it is also illegal to send PBS-subsidised medicine out of Australia unless it is for the personal use of the sender. Penalties include a fine of up to \$5000 and/or two years' imprisonment; the fine amount is usually restricted to a maximum of six months' supply of the medicine. 'Regulation 24' written on the script allows the pharmacist to dispense multiple repeats within PBS regulations so that the traveller can carry

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1. MEDICATIONS AND TRAVEL: INFORMATION RESOURCES

Leaving Australia

- International Narcotics Control Board (INCB): 'Travellers' – information for travellers, including international guidelines for national regulations concerning travellers under treatment with internationally controlled drugs
– <http://www.incb.org/incb/en/publications/Guidelines.html>
- PBS: 'Travelling overseas with PBS medicine'
– <https://www.humanservices.gov.au/customer/services/medicare/travelling-overseas-pbs-medicine>
– 'Travelling with PBS medicine' enquiry line: 1800 500 147
- TGA: 'Travelling with medicines and medical devices' and 'Travelling with medical and disability devices and aids'
– <http://www.tga.gov.au/travelling-medicines-and-medical-devices>
– <http://travelsecure.infrastructure.gov.au/specific-needs/medical-and-disability-devices-and-aids.aspx>
- Australian Government Department of Human Services: 'Medicine export declaration form'
– <https://www.humanservices.gov.au/customer/forms/2619>

Re-entering Australia

- TGA: 'Entering Australia' – general information regarding bringing medicines and medical devices into Australia for returning travellers and international visitors
– <https://www.tga.gov.au/entering-australia>
- Department of Immigration and Border Protection: 'Arriving into Australia' – information about medicines needing to be declared when entering Australia
– <http://www.border.gov.au/Trav/Ente/Goin/Arrival>

Aviation security

- TravelSECURE: 'Travelling with medicines' – information about taking medications on international flights
– <http://www.travelsecure.infrastructure.gov.au/specific-needs/medicines.aspx>

Travelling with diabetes

- Diabetes – information about travelling for people with type 1 or type 2 diabetes
– Diabetes Australia: 'Travel'
<https://www.diabetesaustralia.com.au/travel>
– National Diabetes Services Scheme (NDSS): 'Travel'
<https://www.ndss.com.au/travel>
– Diabetes NSW: 'Study, work and travel'
<http://diabetesnsw.com.au/type-1-diabetes/managing-type-1-diabetes/adults/work-and-travel>

enough medication for the duration of the trip. Further information is available from the PBS and TGA (Box 1).

If PBS medications are to be taken overseas for the personal use of a traveller or their companion, or are to be sent by a person for their own use then the Department of Immigration and Border Protection should be contacted and a Medicine Export Declaration may be necessary.

Travellers returning from overseas are able to bring their medications back into Australia, although some may require a permit (an Inbound Travellers Permit). Medications that may be subject to abuse or misuse (steroids, strong pain medicines and other restricted medicines) must be declared at the border. A list of authorities to contact for further information regarding bringing medications into the country is provided in Box 1.

Aviation security and medications

Medicines are exempt from the 100 mL limit on liquids, aerosols and gels in carry-on baggage for flights, the amount allowed being 'a reasonable quantity' – an amount needed for the duration of the flight and allowing for delays – which is at the discretion of the security screening officers. The remainder of the medication should be packed in checked baggage. Hypodermic needles are prohibited unless they are a medical necessity; supporting medical documentation is needed.

Further information regarding security in place at Australian airports, including liquid, aerosol and gel volume restrictions, restrictions regarding medical devices and aids and the security screening process for devices, is available at the TravelSECURE website (Box 1).

Counterfeit medicines and medical devices

Counterfeit medication is recognised by the WHO to be a significant global problem, with estimated figures of up to 15% of all drugs sold worldwide being fake and up to 30% of those sold in the developing world being fake.^{1,3} Although a medication's packaging may appear genuine, the active ingredient may be the wrong amount, inactive, variable across tablets and batches, substandard, toxic or dangerous.^{1,3} This may result in treatment failure or prolonged illness. For this reason, it is strongly recommended that travellers take medications from home rather than purchase them overseas.

Counterfeit antimalarial drugs are a significant problem. The use of poor quality antimalarial drugs both jeopardises the combating of malaria and threatens vulnerable populations by leading to drug resistance and inadequate treatment, as evidenced by the emergence of artemisinin resistance or tolerance in *Plasmodium falciparum* on the Thailand–Cambodia border.⁴

Drug interactions

Several potential drug interactions exist between commonly taken medications and travel-related medications (including antimalarials, antidiarrhoeals and altitude medications). The list of potential interactions is quite extensive and for further information see in particular *CDC Health Information for International Travel (The Yellow Book)* and *Stockley's Drug Interactions*.^{5,6}

Examples of potential drug interactions between commonly

taken medications and antimalarials and antidiarrhoeals include the following:^{5,7}

- mefloquine (antimalarial) – may alter the QT interval and should be used with caution or avoided with other drugs that affect cardiac conduction and some selective serotonin reuptake inhibitors, and avoided in travellers with a history of seizures
- doxycycline (antimalarial) – may increase methotrexate toxicity and depress prothrombin times; the INR will need to be checked prior to its commencement, during its use and after its cessation⁸
- fluoroquinolones (antidiarrhoeal) – may affect prothrombin time and the QT interval, destabilise blood glucose levels and, when used with some statins, increase the risk of myopathy
- azithromycin (antidiarrhoeal) – may affect the QT interval, prothrombin time and, when used with some statins, increase the risk of myopathy.

Immunosuppressant medications

The implications of taking immunosuppressant medication can be difficult to manage both before and during travel, with the concurrent use of live vaccines being contraindicated and multiple drug interactions occurring with many travel-related medications. Antiretroviral medications in particular have been associated with malaria prophylaxis failure.

Complementary and alternative medications

Many complementary and alternative medications and natural substances have active chemical effects, with some shown to influence, for example, warfarin levels (such as ginkgo biloba, ginger and mango). However, there is still a paucity of evidence-based resources for clinicians.⁹⁻¹²

Medications and crossing time zones

Managing medications while flying across time zones can be complex and will depend on the medication, number of doses, time of day, need to take with or without food, and number of time zones crossed. Many medications, such as vitamin D or cholesterol-lowering medication, can have a dose missed without untoward effect. However, some medications are more time-dependent, so a traveller who is unsure about how to manage changing schedules should be referred to a doctor well-versed in travel health, such as at a specialised travel health clinic.

Generally, medication schedules can be adjusted gradually while in transit, with changes of just one to two hours made each day. For long trips across multiple time zones, this may be started a few days before commencing travel while also starting to change sleep patterns in preparation for the local time at the destination. Schedules for medications taken twice or three times daily, such as those taken for epilepsy or Parkinson's

disease, are usually simply adjusted to the destination time by taking the medication either during the flight or on arrival at the destination. If altered sleep patterns are likely to be a problem in adhering to medication schedules, aids such as alarms and dosette boxes may be of value to monitor usage and ensure medications are taken on time.

Oral contraceptives

Oral contraception timing is especially important with the progesterone-only pill, which needs to be taken within two to three hours of the same time each day. This is likely to be a problem when flying west within one to two time zones as the length of day is extended a few hours; in this case, it is better to take one extra tablet earlier rather than extend or miss a dose.

Anticoagulants

Managing anticoagulant medication is now less of a challenge with the increasing use of NOACs (novel/non-vitamin K antagonist anticoagulants), especially as reversing agents for these agents become available. For patients taking warfarin, ensuring INR levels are stable before travel is important, as well as pre-arranging testing during longer trips. Portable self-monitoring testing devices are readily available but it is advisable for the traveller to be familiar with the use of these and to know how to change the dose regimen if necessary.

Diabetes medications

People with diabetes need to plan dosages and timing of their medications around their itinerary well ahead of their travel. For those taking insulin, more frequent self-monitoring of blood glucose is advised when crossing time zones, with appropriate dose adjustments.¹³ For example, the pre-meal glucose reading will indicate the appropriate dose of short-acting insulin, with a longer-acting insulin used before sleep on a long-haul flight (assuming a meal is eaten). Insulin does not need to be refrigerated during the flight or generally, unless in hot climates. A supply of snacks should be carried, as well as readily available carbohydrate (jelly beans or liquid soft drink) for hypoglycaemia and glucagon in case of a severe hypoglycaemic episode.

Needles and syringes can be taken on aircraft with the appropriate documentation (a doctor's letter) and should be declared at border crossings.

Information on diabetes and travel is widely available on diabetes organisation websites, and the traveller can check with the individual airlines about any special requirements (Box 1).

General recommendations

It is highly recommended that international travellers carry their prescriptions and/or a list of medications they are taking in a letter or certificate signed by their doctor. This certification can be kept with the travel vaccination record carried by travellers

2. TRAVEL MEDICAL KIT RECOMMENDATIONS*

Over-the-counter items

For general travel

- Antifungal powder or cream for thrush/candida
- Antihistamines
- Antiseptic cream and hand wipes
- Cold and flu tablets
- Condoms and lubricant
- Dressings (e.g. adhesive bandage strips, gauze, crepe bandage, adhesive skin closure strips, microporous paper tape)
- Eye lubricant drops
- Insect repellent containing 30 to 40% N,N-diethylmeta-toluamide (DEET) or 20% picaridin
- Medical alert bracelet or necklace
- Oral rehydration solution
- Pain killers – paracetamol, ibuprofen or aspirin
- Pressure-regulating earplugs
- Safety equipment (helmets, child car seats)
- Safety pins
- Scissors
- Spare prescription glasses or contact lenses
- Sunscreen cream (factor 15+)
- Thermometer
- Throat lozenges
- Tweezers

Plus for more 'off the beaten track' places

- Bednet, permethrin-impregnated
- Iodine tincture or iodine-based water purification tablets
- Permethrin for clothing and mosquito nets
- Suture kit, syringe, syringe needles, IV-giving sets, disposable gloves
- Water immersion heater/purifier

Prescription items

- Antibiotics
- Antidiarrhoeals
- Antimalarials
- Altitude/mountain sickness medications
- Adrenaline (epinephrine) pen
- Cortisone tablets/cream
- Diabetes medications and supplies
- Motion sickness and antinausea medications
- Sleeping tablets and jet lag remedies

* These are additional to medications taken on a regular basis at home.

as supplied at specialised travel health clinics.¹⁴ This documentation will go a long way to ameliorate any concerns customs officials may have when questioning travellers, especially when combined with a health summary letter listing relevant medical history, recent pathology and any allergies. For higher risk patients with cardiovascular conditions, it may be helpful to also include a recent ECG for comparison if needed.

Further recommendations for international travellers are listed below; most of these also apply to domestic travellers.

- Travellers should be advised to check any legal requirements regarding the medications they plan to take with them with the embassy, consulate or mission in Australia for each destination country.
- Sufficient medications, and also any testing equipment, should be taken to cover the duration of the trip with some extra in case of delays. Use-by dates should be checked.
- Medications should be taken in their original containers. If space is an issue and the medications are packed into smaller packets, the medication label should be removed from the original pack and taped to the replacement container.
- People with serious medical conditions such as diabetes, epilepsy or allergy should be advised to wear an alert bracelet or necklace.
- A traveller's medical kit can be made up specific to the traveller's needs for the trip (Box 2).¹⁵ Many professional sporting organisations and commercial companies have available more extensive kits to meet specific purposes. These kits are made up and kept stocked in accordance with strict regulations.
- Travel health clinics can provide specialised travel medical kits that include prescription medications for personal use in case of illness.

Conclusion

Medications are generally taken daily and consideration of the need to make appropriate preparations when travelling internationally will help minimise potential problems and ensure a healthy, productive and enjoyable trip.

It is important for the travel health adviser to discuss various points with the traveller as relevant to their individual trip. These include carrying appropriate documentation with medications, taking sufficient medication for the trip and potential delays, being aware of potential drug interactions between commonly taken medications and travel-related medications, and managing medications when crossing time zones.

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References

A list of references is included in the website version of this article (www.medicinetoday.com.au).

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