

Guide to travelling for people with diabetes

Be prepared

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The measures that people with diabetes need to take when travelling depend on the length of the trip and the destination. Preparation and education can ensure a safe journey.

People with diabetes are travelling more than ever before. In the USA, the number of travellers with diabetes has been estimated to be about three million per year.¹ Diabetes is, to a large extent, a self-managed condition, so people with diabetes who travel will face several challenges, from managing food and fluid intake to managing their medications. Preparation and education are needed ahead of any trip, but particularly one to a developing country, where the range of services available may be limited. Although much of the planning and preparation will be the patient's responsibility, a GP consultation at least six to eight weeks before the planned travel is crucial.

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General measures

Good diabetes care and consumption of a healthy diet while travelling are important measures to ensure that the person's trip is enjoyable. Issues to consider include assessment of the level of glycaemic control, the risks of the proposed itinerary and the patient's management competencies, such as self-monitoring skills, ability to recognise hypoglycaemic episodes and management of sick days. In more complex cases, consultation with an endocrinologist and/or diabetes educator may be needed for help with travel advice, sick day plans and advice on exercise, alcohol consumption and hypoglycaemia. For people with additional dietary requirements (such as those with coeliac disease) then a dietitian review may also be indicated.

People with diabetes need to ensure that they have adequate travel insurance cover. They also need to do some research on the healthcare facilities in the countries they will be visiting. Several travel insurers offer cover for people with chronic conditions such as diabetes but the premiums may be higher. The



travel health insurer should be able to provide phone numbers for advice on local healthcare facilities. Other sources of advice include the International Association for Medical Assistance to Travellers and the list of travel health clinics maintained by the International Society of Travel Medicine (Box).

Individuals should be strongly encouraged to register with the National Diabetes Services Scheme (NDSS). A NDSS card is accepted by airlines and airport security as primary proof



Key points

- A GP consultation at least six to eight weeks before planned travel is crucial for patients with diabetes.
- Travellers with diabetes need adequate supplies of medicines, a health and medication summary and a National Diabetes Services Scheme card.
- While travelling, consumption of a healthy diet and good diabetes care are important.
- Adequate travel insurance cover is needed for people with diabetes.
- Permission may be needed from the airline to take diabetes equipment on board the aircraft.
- Oral glucose-lowering medicines should be taken as prescribed, according to local time at the destination.
- Bolus or mealtime insulin should only be administered when the meal has been served as turbulence can delay food service.

needles, insulin pump consumables, finger-prick devices and lancets) on the aircraft.

The traveller will need to contact their airline before travelling to obtain any permission needed to take diabetes equipment on board (if applicable) and inform them of any special dietary requests. The importance of this step was illustrated some years ago when a traveller to Sydney was not allowed to take insulin on board the aircraft – by the time of arrival, he was severely ill with a hyperosmolar coma.²

People with diabetes should make sure their blood glucose monitor is functional and calibrated and that they have spare batteries with them. The very cautious may even consider taking an extra blood glucose meter as a back-up.¹ If required, a sharps disposal container is another item to add to the checklist.

Travellers need to take adequate supplies of their regular medications and check that they will not expire when overseas. In general, travellers should take their prescribed medicines in the original containers and carry them in their hand luggage (or divided between hand luggage and checked luggage). Carrying enough medicines in the carry-on luggage for the whole trip and at least a few days afterwards is a good idea in case the checked baggage goes missing.²

There are legal restrictions on taking out of Australia medicines subsidised by the

that a person with diabetes treated with insulin needs to carry with them their diabetes equipment. People with diabetes should be advised to wear an identification or medical alert bracelet, wristband or necklace, especially if they are at risk of hypoglycaemia, which includes all those using insulin.

Pretravel preparations

A health summary letter from their GP, with an up-to-date medication list and a record of

any allergies is of great value for any traveller with long-term health issues. For a person with diabetes, the letter needs to include the type of diabetes the person has and details of other comorbid conditions, as well as medications and dosages, including rescue medications such as glucagon. Listing generic drug names is preferable because brand names will vary from country to country. The letter also needs to state whether the person needs to carry diabetes equipment (such as syringes, pen

Web resources

- **Diabetes Australia travel advice page**
www.diabetesaustralia.com.au/travel
- **International Association for Medical Assistance to Travellers**
www.iamat.org
- **International Society of Travel Medicine**
www.istm.org
- **Medicare (Australians overseas)**
www.humanservices.gov.au/customer/subjects/australiansoverseas
- **National Diabetes Services Scheme**
www.ndss.com.au

Pharmaceutical Benefits Scheme. Only a reasonable quantity can be taken overseas for the personal use of the traveller or someone they are accompanying, such as a child. Information for travellers is available by phoning the Travelling with PBS medicine enquiry line on 1800 500 147 and on the Medicare Australia website (Box). In general, carrying a supply for up to six months is generally not questioned, and carrying a supply for up to 360 days is possible for some medicines. A prescription can be endorsed with the term 'regulation 24' to allow the pharmacist to dispense the required amount of medication at one time. There can also be legal restrictions for potentially addictive drugs such as narcotics and amphetamines; in some countries, such as the United Arab Emirates, medications containing codeine are illegal.

Travelling with insulin

Some medicines, including insulin, are affected by temperature and this can create potential problems during travel, especially if refrigeration is required. In general, airlines are not prepared to take responsibility for storing medicines in aircraft refrigerators; even if they are, there is a risk of the drugs getting lost. As insulin remains stable for several months at room temperature, refrigeration while on-board during air travel is not necessary.

It is advisable that people take with them at least twice the amount of insulin and glucagon they need, and transport one set in the carry-on luggage and the other in the checked-in luggage, as both carry-on and

checked-in luggage may be lost or stolen. Insulin and glucagon in the checked-in luggage should be wrapped in a thick soft covering (such as a towel) to protect it against damage and temperature variations.

On longer flights, patients using insulin may need to take one or more doses. The cabin air pressure (lower than air pressure at sea level) may mean that insulin is slightly more difficult to draw out of the vial than when on land, and with insulin pen devices there may be some leakage when the tip is applied. Cabin service can often be interrupted and delayed, such as due to turbulence, so it is important that bolus or mealtime insulin is not administered until the meal has been served.

Insulin pumps

There are several issues when travelling by air with insulin pumps (continuous subcutaneous insulin infusion). These pumps are considered medical devices and people need to inform the airline about them before departure.

When an insulin pump is in operation the person cannot be x-rayed or body scanned because this could cause a malfunction of the pump. Security officers need to be informed of this and can safely use a metal detector instead. However, when a pump is inactive, with the battery removed, the person can be x-rayed without causing harm to the device.³ Once on-board the aircraft, pump users need to inform cabin crew that they are using an insulin pump in case its operation is mistaken for electrical equipment and they ask for it to be switched off during take-off and landing.

As a manifestation of Boyle's Law, bubbles can form in the pump tubing and cartridge during altitude changes such as take-off and landing, possibly leading to unintended delivery of insulin. This finding was reported in an Australian study and it was recommended that insulin pumps be disconnected just before take-off.⁴ The article also suggested that the pump be reconnected at cruising altitude after removing bubbles from the cartridge and disconnected again on landing.⁴ However, there are several other factors, such as changes in food choices and reduced physical activity, that could affect

glucose control during travel⁵ and also reports of people using pumps during flight who experienced variability in glucose control. Therefore, people using pumps should seek advice from their specialist and/or pump manufacturer about whether they should disconnect the pump before take-off and on landing. The reports of variability in insulin delivery also highlight the need for more frequent testing of blood glucose during the flight.⁵

Travelling across time zones

The timing of medicines for diabetes can be an issue when flying across multiple time zones.

People with diabetes embarking on a long-haul flight should be advised to take their blood glucose meter on-board to monitor their blood sugar levels and to take a supply of rapidly acting carbohydrate, such as dextrose tablets, as a precaution against hypoglycaemia. For those at risk of severe hypoglycaemia, glucagon should be carried on the plane because there are usually medically trained people on flights who can administer this if required. More frequent than usual monitoring of blood glucose is suggested, such as every four hours. It is also important for people with diabetes to maintain hydration and minimise alcohol intake during the flight.

People taking oral glucose-lowering medicines should take them as prescribed, according to local time at the destination. Adjustment of insulin dosing is not usually needed for trips with a change of time zone of less than four hours; however, trips with greater time zone changes may require dosing adjustment. Detailed individual advice from the patient's GP or specialist and/or diabetes educator, depending on the person's insulin regimen, will be needed. As a general rule, insulin should be administered at times that are consistent with the aircraft's schedule; for example, take insulin for dinner when they serve dinner on the plane. Occasionally, a change to a basal bolus regimen may be needed to facilitate dosage adjustment.

People using insulin pumps should seek advice from their specialist; in general, the

pump clock is changed regularly to match the aircraft's schedule. When dinner is served, the clock should be changed to the person's usual dinner time, at bedtime the clock can be changed to their usual bedtime and when they arrive at their destination the clock should be changed to local time. Changing the clock will mean that the pump settings are always appropriate to the situation.

Other considerations for travellers with diabetes

Most airlines offer 'diabetic meals' on request. These meals are low carbohydrate and are unsuitable for people with type 1 diabetes. The standard meals on flights are usually healthy, well balanced and contain appropriate carbohydrates, so asking for a 'diabetic meal' is not essential.

Depending on the travel route and destinations, people with diabetes should follow the same advice as other travellers about using sun protection and having up-to-date and appropriate travel immunisations. People with diabetes will be at greater risk of complications from several vaccine-preventable diseases, including influenza.

Assessment for travel health risks involves thinking about the individual traveller (e.g. medical history, allergies, previous vaccinations, etc), their planned trip (e.g. itinerary, purpose of travel, type of accommodation, rural travel, etc) and the time and context of travel (e.g. seasonal hazards, political unrest, safety and security). In general, people going to the developing world where diseases transmitted by the faecal-oral route are a risk should be vaccinated for hepatitis A and typhoid. Further information is available in the *Australian Immunisation Handbook* and the US Centers for Disease Control and Prevention *Yellow Book*.^{6,7}

A greater risk of dehydration in people with diabetes with gastrointestinal infections such as travellers' diarrhoea is a concern. Affected travellers need to be aware of the importance of maintaining hydration, for example by using oral rehydration solution. Antibiotics can be prescribed for the self-treatment of travellers' diarrhoea when overseas. Consideration can also be given to the use of oral cholera vaccine, which

provides some temporary cross protection against travellers' diarrhoea caused by enterotoxigenic *Escherichia coli*.

Advice about foot care and prevention of venous thromboembolism when flying, including wearing below-knee compression stockings, adequate hydration and moving around as much as possible during the flight, is also important for travellers with diabetes. Compression stockings may not be suitable for those with peripheral neuropathy and/or peripheral arterial disease.

Summary

More people with diabetes are travelling than ever before. Planning ahead is the key to safe and trouble-free travel for people with diabetes. Key issues are adequate supplies of medicines, a health and medication summary and NDSS card, travel insurance and airline notification. Patients on insulin will need advice on dose timing and quantity if they will be flying across multiple time zones. **ET**

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