

# Travel vaccines update

**JONATHAN COHEN** MB BS, FRACGP, MFM, FACTM

Five vaccines relevant to Australians travelling overseas have recently been introduced. Their characteristics and advantages over previously used vaccines are briefly discussed here.

More than 20 new vaccines have been introduced into the Australian market since the introduction of the active hepatitis A vaccine in 1993. Some of these are now included on the Australian Standard Vaccination Schedule for children and adults and some are particularly relevant to travellers. The following information is a brief introduction to those relevant to travellers that have become available in the past year or so.

It is suggested that vaccination providers carefully review the relevant manufacturer's prescribing information, which confirms the relevant TGA approval, as well as refer to the current NHMRC *Australian Immunisation Handbook* (8th edition, 2003).<sup>1</sup>

## Adacel

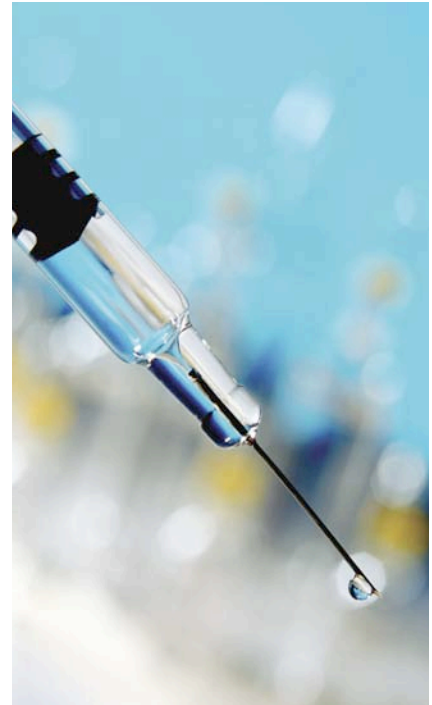
Adacel is a combined diphtheria, tetanus, acellular pertussis (DTPa) vaccine that contains reduced amounts of diphtheria and pertussis toxoid components compared with the paediatric DTPa vaccine. It is indicated as a booster vaccination for adults and children aged 10 years and over, following primary immunisation. The vaccine is administered intramuscularly, with the preferred site over the deltoid. The adverse reaction profile is much better compared with the older vaccines.

Contrary to previous practice, recent advice from the NHMRC ('expert opinion') is that DTPa can be administered at any time following a previously administered dose of tetanus toxoid.

## Boostrix-IPV

Boostrix-IPV is a new combined diphtheria, tetanus, acellular pertussis (DTPa) and inactivated polio virus (IPV) vaccine. It is identical to the currently available Boostrix but with the IPV component added, and is not intended for primary vaccination but rather is indicated for booster vaccination. Boostrix-IPV is a useful addition in that it enables, without the need for an extra injection, the replacing of the oral polio vaccine (as recommended by the Australian Technical Advisory Group on Immunisation and being carried out under the Australian Federal Government's National Immunisation Program).

Boostrix-IPV should be used in travellers aged 8 years and over to polio endemic or epidemic areas and in healthcare



workers who may come in contact with polio cases. It is also appropriate to offer the vaccine to intending or new parents, adults working with young children, and any adult requiring a booster with any of the vaccine components.

## Rabipur

Rabipur is an inactivated rabies virus vaccine. It is a highly purified chick embryo cell vaccine and is the only second generation cell culture rabies vaccine that is both approved by the US Food and Drug Administration and recommended for all established WHO intramuscular and intradermal vaccination schedules.<sup>2</sup>

While TGA approval in Australia for intradermal use has not been sought, Rabipur may be used in accordance with current NHMRC recommended guidelines subject to the following conditions:<sup>1</sup>

- vaccination would otherwise be prevented (by prohibitive cost or limited supply, as a greater amount of vaccine is used in intramuscular vaccination)
- the vaccine provider is well versed in

Dr Cohen is Senior Lecturer, Department of General Practice, Monash University, and Medical Director, Travel Clinics Australia, Melbourne, Vic.

**Table. Travel vaccines that have recently become available**

Vaccine	Vaccine type	Use	Administration	Comments
Adacel	Combined diphtheria, tetanus and acellular pertussis (DTPa) vaccine	Booster vaccination in adults and children aged 10 years and over*	Deep intramuscular, preferably over the deltoid	Fewer adverse reactions than older diphtheria and tetanus vaccines
Boostrix-IPV	Combined diphtheria, tetanus, acellular pertussis (DTPa) and inactivated polio virus (IPV) vaccine	Booster vaccination in adults and children aged 8 years and over*† travelling to polio endemic or epidemic areas or health care workers possibly in contact with polio cases	Deep intramuscular, preferably over the deltoid	Provides replacement for the oral polio vaccine without need for an extra injection
Rabipur	Inactivated rabies virus vaccine (a cell culture vaccine)	Pre-exposure prophylaxis for travellers to rabies endemic areas Post-exposure prophylaxis	Intramuscular usually, but may be intradermal (conditional)	Suitable for intramuscular and intradermal administration (intradermal use requires less vaccine and therefore has cost and supply advantages)
Vaxigrip Junior	Inactivated split virion influenza vaccine	Influenza prevention in children aged 6 months to 6 years	Intramuscular or deep subcutaneous	Formulation suitable for children (half adult dose in prefilled syringe)
Vivotif Oral	Live attenuated vaccine, <i>Salmonella typhi</i> Ty21a Berna	Active immunisation for adults and children aged over 6 years travelling to typhoid risk areas	Oral	Has replaced Typh-Vax Oral Should not taken with antibiotics effective against <i>S. typhi</i> and should be taken well before any antimalarial medications Four-capsule dose preferred for longer term cover

\* Also used for routine booster vaccinations on the Australian Standard Vaccination Schedule. † Also used as a booster vaccination in intending or new parents, adults working with young children and any adult requiring a booster with any of the vaccine components.

intradermal vaccination technique

- the person is not taking chloroquine or related medications concurrently at the time of vaccination
- post-vaccination serology is performed. Intradermal vaccination is usually available at travel clinics.

For both prophylaxis and postexposure treatment, Rabipur is given in the same dose and at the same intervals as the existing human diploid cell rabies vaccine that is used in Australia (Merieux

Inactivated Rabies Vaccine) and the Vero vaccine that is used overseas, and is equally effective. It can be given as booster two to five years following a primary course of rabies vaccine. It should be remembered that true egg allergy is a contraindication to this vaccine.

Pre-exposure prophylaxis is strongly recommended for expatriates and travellers who will be spending prolonged periods (that is, more than a month) in rural parts of rabies endemic areas.<sup>1</sup>

### Vaxigrip Junior

Vaxigrip Junior is an inactivated split virion influenza vaccine suitable for children. It is the same as the adult formulation but is provided in prefilled 0.25 mL syringes instead of 0.5 mL syringes. The recommended dose for children aged 2 to 6 years is 0.25 mL, and for those aged 6 months to 2 years, 0.125 mL. It is important to note that the first time a person is vaccinated, two doses need to be given at least four weeks apart.

### Vivotif Oral

Vivotif Oral is an oral, live attenuated vaccine for active immunisation against typhoid, and was previously branded as Typh-Vax Oral. The vaccine contains *Salmonella typhi* Ty21a Berna, a mutant strain deficient in an enzyme but which still develops the lipopolysaccharide coat believed to be necessary for the immune response.

Vivotif Oral mimics the natural infection mechanism of the typhoid bacterium, providing a three-layered immune response by mediating the development of mucosal IgA and a cell mediated immune response in the gut lumen, as well as a humoral immune response in the blood.

Typhoid is a relatively uncommon infection but Australian travellers returning from overseas continue to present

with it in significant numbers each year. It is a serious illness and can affect large numbers of contacts. Vaccination is indicated for adults and children aged over 6 years travelling to areas of risk.

The vaccine is supplied as a three-capsule pack, one capsule to be taken on days 1, 3 and 5. Boosters are recommended at one to three years; a fourth capsule may be recommended to extend immunity to three to five years. Each capsule should be swallowed whole, not taken with antibiotics effective against *S. typhi*, and precede antimalarial tablet prophylaxis.

### Conclusion

The recently introduced travel vaccines described in this article provide advantages such as fewer adverse effects and more convenient administration, compared with previously used travel vaccines. **MT**

### References

1. NHMRC. The Australian immunisation handbook, 8th ed. Canberra: Commonwealth of Australia; 2003. [www9.health.gov.au/immhandbook](http://www9.health.gov.au/immhandbook) (accessed June 2006).
2. Rabipur product profile. [www.rabies.net/cont\\_21.rabipur.php](http://www.rabies.net/cont_21.rabipur.php) (accessed June 2006)

**DECLARATION OF INTEREST:** Dr Cohen is Medical Director, Travel Clinics Australia.

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