

2 VACCINATIONS

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Vaccines offer reliable protection against a limited range of important disease hazards. Where travellers sometimes go wrong is to assume that, once they've had the injections, there's nothing more to be done. Few things could be further from the truth. An important benefit of being vaccinated is the opportunity to discuss a wider range of health concerns and precautions that will keep you healthy during your trip.

Travel vaccines can be obtained from your general practitioner, university occupational health department or a specialist travel clinic. Try to make arrangements at least six weeks before departure, to allow time for vaccines requiring more than one dose, and to avoid having to travel with a sore arm or other side-effects. In the UK, there were severe shortages of yellow fever vaccine during 2000 and 2001, of rabies vaccine in 2000, of the oral polio vaccine in 2001 and of the booster dose of the diphtheria vaccine. An important reason for being vaccinated well in advance of travel is to allow enough time for any supply problems to be overcome.

Certificates and regulations

Yellow fever remains the only disease for which international, WHO-approved vaccination certificates still apply as a condition of entry to some countries. Travellers to Saudi Arabia during the Haj (pilgrimage to Mecca) may be asked to show a vaccination certificate for the currently prevalent strain of meningitis. Long-term travellers to certain countries may very occasionally also be asked to show a so-called "AIDS-free" certificate or HIV test result. These requirements contravene WHO international regulations, but there is not much that most travellers can do about them.

Choosing which vaccines to have

Few of the travel vaccines that are used are required formally as a condition of entry, but are based on recommendations that take account of the likely risks to your own health: where you are going within a particular country; how you will be travelling; how long you will be staying; and whom to ask for advice.

TABLE 2.1 PRE-TRAVEL VACCINATIONS

Vaccination	Primary course	Booster
Routine		
Diphtheria	3 doses at monthly intervals	Single low dose if > 10 years
<i>Haemophilus influenzae b</i>	2–3 doses 2 monthly	Single dose
Influenza	Single dose	Yearly
Pneumococcal	Single dose	Repeat in those at high risk
Polio (Sabin)	Monthly intervals	3 doses at 10 years
Polio (Salk)	As above	10 years
Tetanus	3 doses at monthly intervals	10 years (max. 5 doses)
Travel		
Hepatitis A (Havrix Monodose)	Single dose	6–12 months, then 10 yearly
Hepatitis B	0, 1 and 6 months	3–5 yearly
Japanese B encephalitis	3 doses on days 0, 7 and 28	1 year and then 4 yearly
Meningococcal	Single dose	3 yearly
Rabies ^{1, 2}	3 doses on days 0, 7 and 28	2–3 yearly
Tick-borne encephalitis	2 doses 1–3 months apart	1 year
Tuberculosis (BCG)	Single dose	None
Typhoid – killed bacteria	2 doses 1 month apart	3 yearly
Typhoid – live attenuated strain	4 doses on alternate days	5 yearly
Typhoid – capsular	Single dose	3 yearly
Yellow fever	Single dose	10 yearly

From the *Concise Oxford Textbook of Medicine*.

1 Should not be given into buttock; deltoid or anterior thigh preferred.

2 Efficacy reduced if given with chloroquine antimalarial prophylaxis.

In the UK, the Department of Health issues guidelines, and the WHO also issues information. Many GPs, travel clinics and other sources formulate their own policies, based on Department of Health and WHO guidelines.

On an expedition, participants inevitably compare the vaccines and medication they have received; inconsistencies are common, leading to unnecessary anxiety, and can undermine confidence in the advice that has been given.

The best option is for an expedition's medical officer to draw up some general guidelines or a formal policy, seeking specialist advice if this is needed. It is always very bizarre when one half of a group has been protected against a particular disease and the other half has not. The best care comes when one clinic or practice takes responsibility for the entire group. If this is not possible, the medical officer should circulate copies of guidelines to all expedition members to present to the individual clinics or practices that will carry out immunisation.

In the UK, not all travel vaccines can be provided on the NHS, and travel vaccines



Figure 2.2 *Geographical distribution of hepatitis B prevalence, 2001 (reproduced by permission of the World Health Organization)*

Hepatitis B vaccine is a sensible precaution for anyone planning to spend a prolonged period abroad, particularly if they will be at increased risk of needing medical treatment, especially a blood transfusion.

In addition to the standard methods of giving the vaccine, accelerated schedules can be used when less time is available prior to departure.

Japanese B encephalitis (Figure 2.3)

Japanese B encephalitis is a viral disease transmitted by mosquito bites. Although rare, it carries a high risk of death (around 30%) and of leaving survivors with serious neurological side-effects. It occurs throughout Asia and New Guinea with the greatest risk during the monsoon or rainy season, between the months of April and October. It occurs mostly in rural areas, where farm animals (baby pigs and ducks) are the source of the infection, but in South Vietnam it is now perennial even in urban areas.

The vaccine should certainly be considered by anyone likely to spend much time in rural parts of Asia.

Meningitis (Figure 2.4)

Epidemics of meningitis appear periodically in many parts of the world, particularly in the region known as Africa’s “meningitis belt” – the Sahel, from Senegal across to the Sudan.

Most travel clinics are able to provide up-to-date information about areas of risk. Anyone who has had their spleen removed may be more vulnerable to this condition.

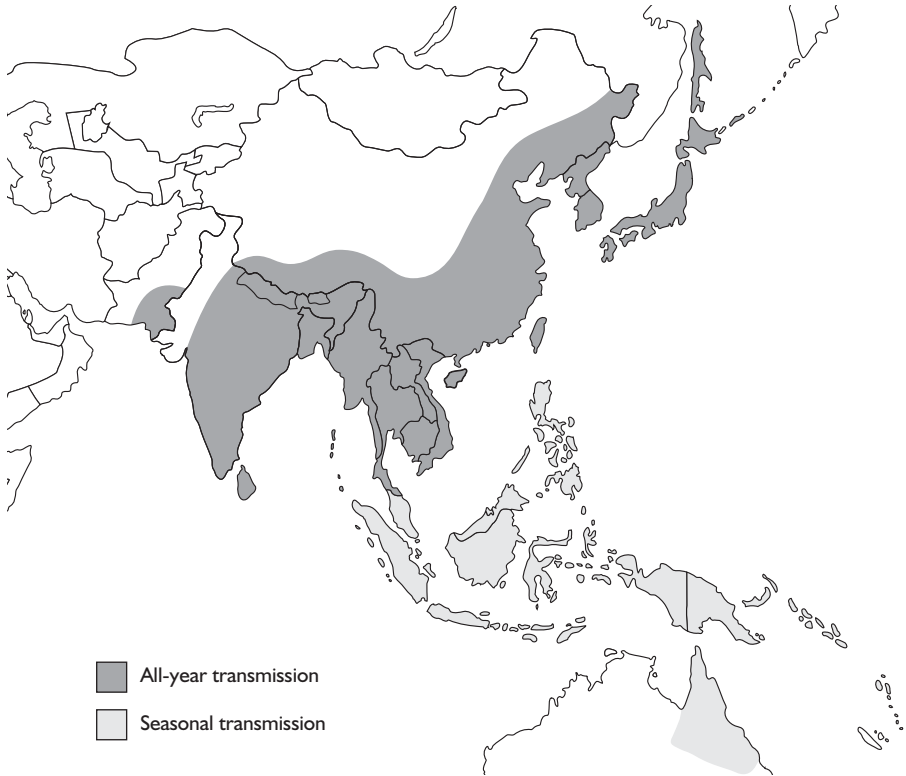


Figure 2.3 *Geographical distribution of Japanese encephalitis, by endemic countries and regions of south-east Asia, 2001 (reproduced by permission of the World Health Organization)*

The vaccine is highly effective, and provides protection for 3 years.

Many expedition participants will have received the meningitis C vaccine at school or college, but this may not cover important travel-related strains: further vaccination is usually needed. Vaccination against the A, C, Y and W strains is currently appropriate for Saudi Arabia, while elsewhere the A + C vaccine will usually suffice.

Rabies (Figure 2.5)

Rabies is spread by bites and by licks and scratches on broken skin by infected animals, and is common in developing countries. Because rabies is such a serious infection, anyone who is exposed needs vaccination and rabies immune globulin (RIG) injections. Good-quality vaccines and RIG are not available in most of the places where rabies is a problem.

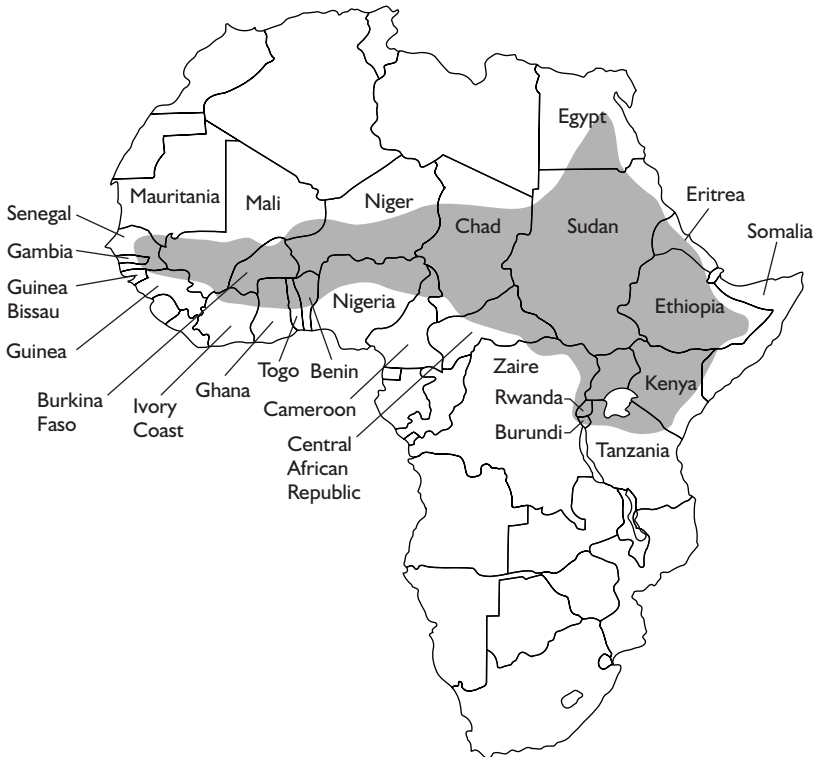


Figure 2.4 *Distribution of meningococcal meningitis in Africa*

Pre-exposure vaccination simplifies the treatment necessary after a bite: fewer vaccine doses and no need for RIG injections. It is increasingly recommended for travellers likely to be exposed, particularly for travel to the Indian subcontinent, Burma (Myanmar), Thailand, the Philippines and other parts of south-east Asia, and parts of Africa and South America.

The new rabies vaccines are safe and cause little or no reaction; ideally, three doses of vaccine are necessary, so some advance planning is required.

Tick-borne encephalitis (Figure 2.6)

This is a viral infection transmitted by ticks throughout coniferous forest areas of central Europe and Scandinavia. It carries a 10% risk of death or disability. The risk is highest on forested hills and mountains between April and November. The risk of infection can be reduced by wearing stout footwear and thick socks, applying an insect repellent and removing ticks promptly.

A vaccine is available from travel clinics for anyone going on hiking trips or proposing to spend much time outdoors.



Figure 2.5 *World distribution of rabies, 2001*
(reproduced by permission of the World Health Organization)

Typhoid

Typhoid remains common in all developing countries, and in most hot countries where hygiene is poor. Vaccination is advisable for travel to Africa, Asia and Latin America, and should also be considered for travel to Mexico and the Caribbean. The Mediterranean is becoming increasingly polluted with sewage, and typhoid vaccination is a reasonable precaution for anyone proposing to spend much time in the water there.

Two vaccines are available: an oral vaccine, consisting of three capsules to be swallowed on alternate days, providing full protection for only about 1 year; and an injected vaccine, which provides 3-year protection after a single dose.

Yellow fever (Figure 2.7)

Worldwide, the risk of yellow fever is growing. Recently, a Belgian died of yellow fever acquired in The Gambia. Vaccination against yellow fever is necessary for travel to many parts of Africa and South America, either as a certificate requirement or for personal protection. It is also a certificate requirement in Asia for travellers arriving from affected regions of Africa and South America. The certificate lasts 10 years, but does not become valid until 10 days after vaccination: if you know that you are likely to have to travel at short notice, do have the vaccine in advance.

The vaccine hardly ever produces a reaction, and only a single dose is necessary. Since it is a live attenuated (weakened) virus, it should not be given to pregnant women, young children or people who are immunosuppressed by disease or drugs.

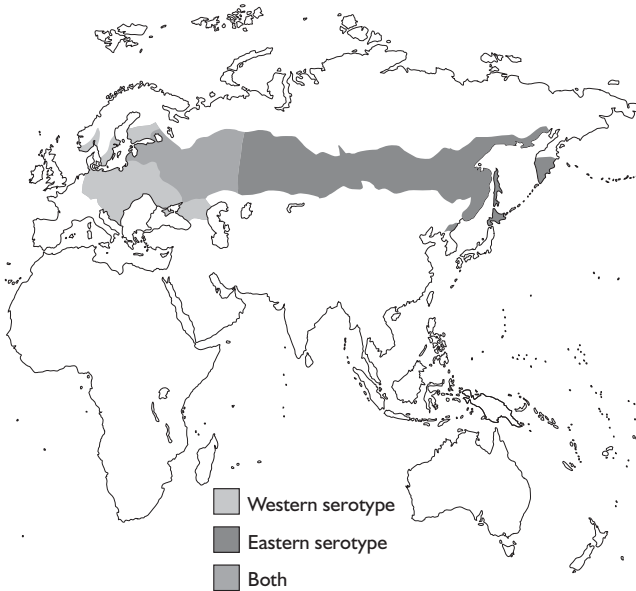


Figure 2.6 *Distribution of tick-borne encephalitis*

Live vaccines should be avoided during pregnancy and in people suffering from reduced immunity – specialist advice may be needed in these as well as in other special situations.

TABLE 2.2 LIVE AND INACTIVATED VACCINES	
<i>Live vaccines</i>	<i>Killed/inactivated vaccines</i>
Cholera oral (not UK)	Diphtheria
Measles/MMR	Hepatitis A, hepatitis B
Polio oral	Japanese B encephalitis
Tuberculosis (BCG)	Meningitis A + C
Typhoid (Ty 21a)	Polio (injected)
Yellow fever	Rabies
	Tetanus
	Tick-borne encephalitis
	Typhoid (Vi antigen)

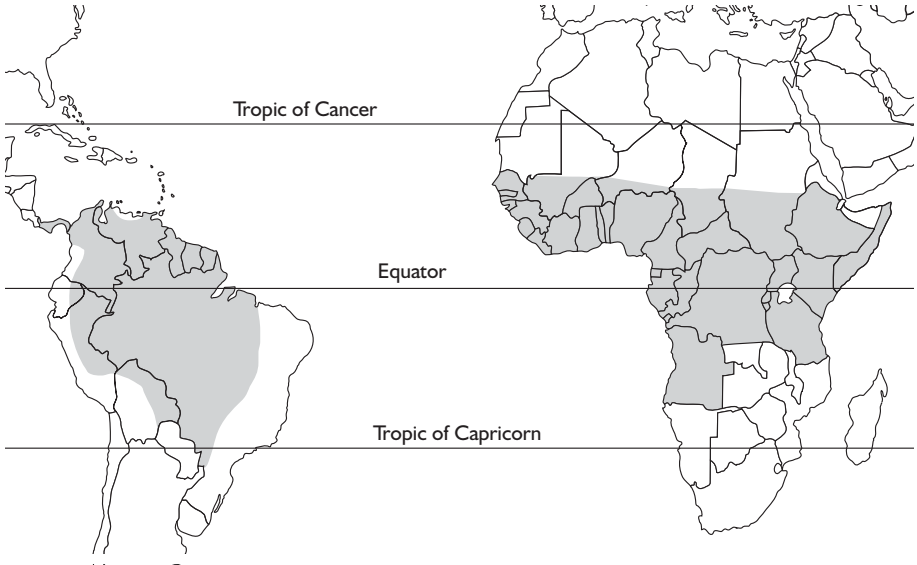


Figure 2.7 World distribution of yellow fever, 2001
(reproduced by permission of the World Health Organization)

OTHER ROUTINE VACCINATIONS

Everyone should also be protected against **tetanus** and **polio**, whether they travel or not. Childhood vaccination does not provide lifelong protection, and boosters are necessary every 10 years. North, Central and South America, and the Caribbean, have recently been declared polio-free zones, but a few vaccine-related cases have been reported from the Caribbean and Central America. There are still cases in Africa and Asia, but it is likely that polio will be eradicated worldwide within the next 2 or 3 years.

Diphtheria vaccine is usually given in childhood, but not everyone will have had it. A booster dose can be given in case of doubt, especially for travellers to countries of the former Soviet Union who will be in close contact with local people. Protection from childhood doses is not lifelong and begins to decrease in the mid-30s.

Expedition members travelling to developing countries and who will be in close contact with local people may need specialist advice on the question of **tuberculosis** protection if they did not have BCG vaccination during childhood.

COMBINED VACCINES

Increasingly, vaccines are becoming available in combinations. Combined typhoid/hepatitis A vaccines are a recent addition to this trend, and there are also combined hepatitis A/B and combined tetanus/diphtheria vaccines.

RESOURCES AND FURTHER ADVICE

The WHO and the Centers for Disease Control in Atlanta, Georgia, USA publish useful information as well as weekly reports on the incidence of illness in various parts of the world. This information is now most readily accessible through their websites. The Communicable Disease Control Centre at Colindale, London gives valuable advice. The following are also useful:

Published information

PHLS Communicable Disease Report (weekly). Compiled at the PHLS Communicable Disease Surveillance Centre from confidential reports from PHLS and hospital laboratories in England, Wales and Ireland. Issued by PHLS Communicable Disease Surveillance Centre, 61 Colindale Avenue, London NW9 5EQ. Tel. +44 20 8200 6868

WHO Weekly Epidemiological Record Global Epidemiological Surveillance and Health Situation Assessment, World Health Organization, 1211 Geneva 27, Switzerland
International Travel and Health, published annually by WHO, Geneva, Switzerland
Health Information for Overseas Travel, Lea, G. and Lease, J., HMSO, London, 2002
The Lancet Infectious Diseases, specialist journal, published monthly

Information available by telephone (see also Appendix 5)

Hospital for Tropical Diseases,
Mortimer Market, Capper St, London WC1E 6JA
Tel. +44 20 7388 9600

British Airways Travel Clinics Information Line (run by MASTA)
Tel. +44 1276 685040

Public Health Laboratory Health Centres

London:	Tel. +44 20 7725 2757
Midlands:	Tel. +44 174 326 1336
North:	Tel. +44 191 261 2577
North west:	Tel. +44 151 529 4900

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Information sources on the Internet

World Health Organization (WHO)
www.who.int

Centers for Disease Control (CDC) USA
www.cdc.gov/mmwr

Communicable Diseases Surveillance Centre (CDSC) England and Wales
www.open.gov.uk/cdsc/cdschome.htm

MASTA (Medical Advisory Service for Travellers Abroad)
www.masta.org

Travel Health Online
www.tripprep.com

NHS (Scotland) public access travel health information website
www.fitfortravel.scot.nhs.uk

The Fleet Street Travel Clinic
www.fleetstreetclinic.com
Info@fleetstreetclinic.com

The Travellers' Health website
www.travellers'health.info has news and links to over 200 travel health-related sites.