

# 34 PULSE SERVICES TRAVEL VACCINATIONS & MALARIA PROPHYLAXIS

Destination	Malaria											Recommended regimen	Less satisfactory regimen	Main parasitic hazards	
	Typhoid	Hepatitis A	Cholera	Polio	Tuberculosis	Hepatitis B	Japanese encephalitis	Rabies	Yellow fever	Mening/ACWY	Risk areas and seasons				
Abu Dhabi															Le
Afghanistan	R	R	S	R	R	S	S	S	S	C			PC	DRF	Le
Albania	S	R								S					Le
Algeria	S	R								C			W		Sh Le
Angola	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Sh Ta
Antigua & Barbuda	R									C					
Argentina	S	R								S			C		P
Armenia	R									S			C		P
Australia										C	S				
Austria										S					
Azerbaijan	S	R								S			C		P
Bahamas	R									S	S				
Bahrain	R									S	S				Le
Bali	R	R	S	R	R	S	S	S	S	C	S		W		
Bangladesh	R	R	S	R	R	S	S	S	S	C	S		ME or DO or MON	*	Le
Barbados	R									S	C				
Belarus	S	R								S					
Belize	S	R								S	C		C		P
Benin Republic	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Sh Le
Bermuda	S									S					
Bhutan	R	R								S	C	S	PC	DRF	Le
Bolivia	R	R								S	R		ME or DO or MON	PC	
Borneo	S	R								S	C	S	ME or DO or MON	PC	
Bosnia	R									S					Le
Botswana	R	R	S							S	C		ME or DO or MON	PC	Sh Ta
Brazil	S	R								S	R		ME or DO or MON	PC	Sh Le Tc
Brunei	S	R								S	C	S			
Bulgaria	R									S					
Burkina Faso	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Sh Le Ta
Burundi	R	R	S	R	R	S	S	S	S	R	S		ME or DO or MON	*	Sh Ta
Cambodia	R	R								S	C	S	DO or MON	*	
Cameroon	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Sh Ta
Canada															
Cape Verde Islands	R	R								S	C		W		Le
Cayman Islands	R									S					
Central African Rep.	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Sh Ta
Chad	R	R	S	R	R	S	S	S	S	R	S		ME or DO or MON	*	Sh Ta
Chile	S	R								S					Tc
China (Mainland)	S	R	S							S	C	S	ME or DO or MON	PC	Sh
China (Hong Kong)	S	S								S					
China (Macao)	S	R								S					
Colombia	S	R								S	R		ME or DO or MON	PC	Le Ta
Comoros	R	R	S							S	S		ME or DO or MON	PC	Le
Congo	R	R	S							S	M	S	ME or DO or MON	*	Sh Ta
Congo-Dem. Rep.	R	R	S							S	M	S	ME or DO or MON	*	Sh Ta
Cook Islands	R	R								S					
Costa Rica	S	R								S	C		C		Le Tc
Croatia	R									S					Le
Cuba	R									S					
Cyprus	S									S					Le
Czech Republic	S									S					
Djibouti	R	R	S							S	C	S	ME or DO or MON	*	Sh Le

Destination	Malaria											Recommended regimen	Less satisfactory regimen	Main parasitic hazards				
	Typhoid	Hepatitis A	Cholera	Polio	Tuberculosis	Hepatitis B	Japanese encephalitis	Rabies	Yellow fever	Mening/ACWY	Risk areas and seasons							
Dominican Republic	S	R								S	S				Yes, variable risk	C	P	Sh Le
Dubai	R									S	S				No			Le
East Timor (Timor Leste)	R	R								S	S	C	ME or DO or MON	*	Le			
Ecuador	R	R								S	S	R	ME or DO or MON	PC	Tc			
Egypt	R	R								S	S	C			(No risk tourist areas)			Sh Le
El Salvador	R	R								S	S	C	W		Yes, very low in El Faiyum, June-Oct			Le Tc
Equatorial Guinea	R	R	S							S	S	R	C		Yes, border with Guatemala & Honduras. Elsewhere, low risk			Sh Ta
Eritrea	R	R								S	S	C	ME or DO or MON	*	Yes, high risk			Sh Le
Estonia	R									S	S				No			
Ethiopia	R	R	S	R	R	S	S	S	S	R	S		ME or DO or MON	*	Yes, high risk below 2000m (No risk in Addis Ababa)			Sh
Falklands (Tristan da C.)	S	R								S					No			
Fiji	S	R								S	C				No			
Finland															No			
France															No			Le
French Guiana	S	R								S	M	S	ME or DO or MON	PC	High risk inland and border areas, coast and islands/low no risk			Sh Tc
French Polynesia	S	R								S	C				No			
Gabon	R	R	S							S	M	S	ME or DO or MON	*	Yes, high risk			Sh
Gambia	R	R	S							S	R	S	ME or DO or MON	*	Yes, high risk			Sh Ta
Georgia	S	R								S			W		Yes, v. low risk SE villages July-Oct			
Germany															No			
Ghana	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Yes, high risk			Sh Ta
Goa	R	R	S	R	R	S	S	S	S	C	S		PC	DRF	Yes, variable risk			Le
Greece and Islands	S														No			Le
Greenland										S					No			
Grenada	R									S	C				No			
Guadeloupe	R									S	C				No			
Guam	R									S					No			
Guatemala	S	R								S	C		C		Yes, some risk below 1500m			P
Guinea	R	R	S	R	R	S	S	S	S	R	S		ME or DO or MON	*	Yes, high risk			Sh Ta
Guinea Bissau	R	R	S	R	R	S	S	S	S	R	S		ME or DO or MON	*	Yes, high risk			Sh Ta
Guyana	R	R								S	R		ME or DO or MON	*	High risk all areas except coastal cities			Sh
Haiti	R	R								S	C		C		Yes, some risk			P
Hawaii	R														No			
Honduras	R	R								S	C		C		Yes, risk variable			P
Hungary															No			Le
India	R	R	S	R	R	S	S	S	S	C	S	S	ME or DO or MON	PC	Yes, high risk Assam			Le
Indonesia	R	R								S	C	S	ME or DO or MON	PC	Yes, high risk in southern states, Delhi, Jaipur, Agra, Mumbai			Sh
Iran	S	R	S							S	C		PC	DRF	Yes, high in Lombok			Le
Iraq	R	R	S							S	C		C		Yes, rural SE provinces Mar-Nov			Sh Le
Israel	R														Rural north and Basrah province			Sh Le
Italy	S														May-Nov			Le
Ivory Coast	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Yes, high risk			Ta
Jamaica	R									S	C				No			
Japan										S					No			Sh
Jordan	R									S	C				No			Le
Kazakhstan	S	R								S	C				No			Le
Kenya	R	R	S	R	R	S	S	S	S	R	S		ME or DO or MON	*	Yes, high risk (Nairobi and highlands low risk)			Sh Le Ta
Kiribati	R	R								S	C				No			
Korea (North)	R	R								S			W		Yes, some risk extreme S			
Korea (South)	S									S			W		Yes, some risk in extreme NW			
Kosovo	R									S					No			Le
Kuwait	S	R								S					No			
Kyrgyzstan	S	R								S			W		Yes, low risk some S & W areas			Le
Laos	R	R								S	C	S	C		Extreme SW of country, May-Oct			
Latvia	R									S			ME or DO or MON	*	Yes, high risk (minimal risk Vientiane)			
Lebanon	S	R								S	C				No			Le
Lesotho	R	R								S	C				No			Sh
Liberia	R	R	S	R	R	S	S	S	S	M	S		ME or DO or MON	*	Yes, high risk			Sh Ta

### Key

**M** = immunisation mandatory  
**R** = immunisation recommended as risk of infection is substantial  
**S** = immunisation sometimes recommended:  
 – for more than three visits in year  
 – a stay of more than three months in a rural area  
 – high-risk occupational groups  
 – backpackers staying more than one month  
**C** = See Yellow fever, next column

Where **S** appears for cholera, it indicates that only high-risk travellers, usually health care workers in areas of known epidemics, should be immunised.

### Vaccinations information

**Tetanus**  
 Five tetanus doses are considered protective for life by the DH, although there is no evidence base for this. Travellers at risk of tetanus-prone wounds should be given 10-yearly boosters if they are going to poorer countries in Africa, Asia and South America where specific immunoglobulin may be unavailable.

**Polio**  
 All travellers should have completed the British vaccination schedule for polio immunisation in childhood or as adults.

**Yellow fever**  
 An international Certificate of Vaccination **C** is required for travellers from yellow fever zones who wish to enter countries bordering the margins of a yellow fever endemic area, or from more distant countries where a mosquito vector provides the potential for transmission. A certificate may also be required for travellers who have been in transit through yellow fever endemic zones.

An International Certificate of Vaccination may be required (**M**=Mandatory) for all entering travellers over the age of 12 months. For further details see International Travel and Health Requirements and Health Advice, WHO, Geneva 2008. [www.who.int/ith](http://www.who.int/ith)

**Information source and updates**  
 This chart is based on information from the UK TRAVAX website and other databases. TRAVAX is an information service provided by Health Protection Scotland ([www.travax.scot.nhs.uk](http://www.travax.scot.nhs.uk); telephone 0141 300 1130).

The chart is updated regularly. Readers are advised to use the latest chart only, to ensure that their practice reflects the most recent advice.

**Travel vaccinations and malaria information author**  
 Dr Michael Jones, consultant physician, Regional Infectious Disease Unit, Western General Hospital, Edinburgh

### Specialist advice

For advice on complex itineraries and other queries, use the following helplines:  
**Birmingham 0121 424 0357/ 3354/2357**  
**Edinburgh, Western General Hospital 0131 537 2822**  
**London, Coppetts Wood Hospital 020 8883 9792**  
**National Travel Health Network and Centre (Monday to Friday, 9am-12pm, 2pm-4.30pm) 0845 602 6712 (local call rate)**  
**Manchester, Monsall Hospital 0161 720 2677**

### Parasitic infections

Short-term travellers staying in good conditions are usually at low risk of acquiring parasitic infections. Schistosomiasis is common and potentially serious. Leishmaniasis and trypanosomiasis are less common but potentially lethal. Expatriates in remote areas at risk of other rare diseases are not shown in this chart.

**Sh** = schistosomiasis. Travellers should avoid swimming in freshwater lakes and rivers in endemic areas.

**Ta** = African trypanosomiasis (sleeping sickness). Transmitted by tse-tse flies, and a risk in some African game parks and rural areas. Travellers should use insect repellents, close windows if fly swarms approach and seek medical attention for any signs of infection around bites one to three weeks later.

**Tc** = South American trypanosomiasis (Chagas' disease). Transmitted by reduvid bugs that feed at night and reside in the thatch and crevices of rural dwellings. Travellers should avoid sleeping in huts.

**Le** = leishmaniasis. Transmitted by sandflies in arid areas (including Mediterranean coastal areas), mostly at night. Travellers should use insecticide-impregnated mosquito nets and insect repellent.

### Travel medicine update

**Umrah pilgrimage 2010**  
 UK Travax have checked with the Saudi Arabia Embassy, which has stated that although seasonal and H1N1 vaccines are recommended, they are not a visa requirement. Those advising pilgrims should carry out risk assessment and recommend these vaccines where appropriate.

**Polio**  
 The Global Polio Eradication Initiative launched in 1988 has reduced the incidence of poliomyelitis by 99% and in 2009, only 1,020 poliomyelitis cases were reported worldwide. Afghanistan, India, Pakistan and Nigeria remain endemic, but outbreaks continue to occur elsewhere, including most recently a case imported from Mauritania to Senegal.

**Avian influenza**  
 Now that H1N1 swine flu has declined attention is reverting to avian influenza – of which cases grumble on in several countries, including Indonesia where a case was recently reported from South Jakarta District. Globally, 73 cases occurred in 2009, and since 2005, 163 cases have occurred in Indonesia of which 135 have been fatal. Travellers should avoid live animal markets and poultry farms to minimise the tiny risk. Current influenza vaccines are not protective.

**Measles and mumps outbreaks**  
 Shorelands Travax Alert Service has drawn our attention to

Destination	Malaria										Risk areas and seasons	Recommended regimen	Less satisfactory regimen	Main parasitic hazards					
	Typhoid	Hepatitis A	Cholera	Diphtheria	Tuberculosis	Hepatitis B	Yellow fever	Mening/ACWY	Japanese encephalitis	Tick-borne encephalitis									
Libya	S	R														No risk	Le		
Liechtenstein																	No		
Lithuania		R															No		
Macedonia		R															No	Le	
Madagascar	R	R	S													Yes, high risk	ME or DO or MON *	Sh	
Madeira		S														No			
Malawi	R	R	S													Yes, high risk	ME or DO or MON *	Sh Ta	
Malaysia	S	R														Yes, high risk Sabah Yes, low risk deep forests of Malaysia Very low risk elsewhere	ME or DO or MON PC W	PC	
Maldives	R	R														No			
Mali	R	R	S	R												Yes, high risk	ME or DO or MON *	Ta	
Malta and Gozo																No		Le	
Martinique		R														No		Sh	
Mauritania	R	R	S	R												Yes, risk all year in south Yes, variable risk in Central regions July-Oct. Low/no risk in far north	ME or DO or MON	PC	Sh Le
Mauritius		R														Very low risk	W		
Mayotte	R	R														Yes, high risk	ME or DO or MON	PC	Le
Mexico	R	R														Southern rural areas only Elsewhere and tourist areas	C W	P	Tc
Moldova	S	R														No			
Mongolia	S	R														No			
Montenegro	R	R														No		Le	
Montserrat		R														No			
Morocco	S	R														Yes, risk in few rural areas only	W		Le
Mozambique	R	R	S													Yes, high risk	ME or DO or MON *	Sh Ta	
Myanmar (Burma)	R	R	S	R												Yes, east part of Shan State, Yes, elsewhere	DO or MON ME or DO or MON	PC	Sh Le
Namibia	R	R	S	R												Yes, northern third only, Nov-Jun Yes, all year - along Kavango and Kunene Rivers	ME or DO or MON	PC	Sh
Nepal	R	R	S	R												Yes, below 1500m (no risk in Kathmandu)	PC	DRF	Le
Neth Antilles	S	R														No			
Netherlands																No			
New Caledonia	S	R														No			
New Zealand																No			
Nicaragua	R	R														Yes, variable risk	C	P	Le Tc
Niger	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Ta	
Nigeria	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Ta	
Norway																No			
Oman	R	R														No indigenous cases since 2001	W	DRF	Sh Le
Pakistan	R	R	S	R												Yes, significant below 2000m	PC	DRF	Le
Panama	R	R														Yes, east of Canal Yes, west of Canal	PC C	DRF P	
Papua New Guinea	R	R														Yes, high risk below 1500m	ME or DO or MON	PC	
Paraguay	S	R														Yes, extreme eastern areas, Oct-May	C	P	Le Tc
Peru	R	R														Yes, high risk Amazon basin Yes, northern rural areas below 1500m	ME or DO or MON PC	PC DRF	Le Tc
Philippines	R	R	S													Yes, many rural areas below 600m Norisk cities, Cebu, Bohol, Catanduanes	PC W	DRF	Sh
Poland		S														No			
Portugal		S														No			
Puerto Rico	S	R														No		Sh Le	
Qatar	S	R														No		Le	
Reunion		R														No		Sh	
Romania	S	R														No			
Russian Federation	S	R	S													No			
Rwanda	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Ta	
Sabah	S	R														Yes, high risk Low risk Kota Kinabalu	ME or DO or MON W	PC	
Samoa	S	R														No			
Sao Tome	R	R														Yes, high risk	ME or DO or MON *	Sh Le	

Destination	Malaria										Risk areas and seasons	Recommended regimen	Less satisfactory regimen	Main parasitic hazards					
	Typhoid	Hepatitis A	Cholera	Diphtheria	Tuberculosis	Hepatitis B	Yellow fever	Mening/ACWY	Japanese encephalitis	Tick-borne encephalitis									
Saudi Arabia	S	R														Yes, SW region, rural areas of W. region Elsewhere (no risk Mecca, Medina Jeddah)	PC W	DRF	Sh Le
Senegal	R	R	S													Yes, high risk	ME or DO or MON *	Sh Ta	
Serbia		R														No		Le	
Seychelles	S	R														No			
Sierra Leone	R	R	S													Yes, high risk	ME or DO or MON *	Sh Ta	
Singapore		S														No			
Slovakia		S														No			
Slovenia		R														No			
Solomon Islands	R	R														Yes, high risk	ME or DO or MON	PC	
Somalia	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Le	
South Africa	S	R	S													Yes, NE rim bordering Zimbabwe, Mozambique & Eastern Swaziland, including Kruger, Kosi Bay & Jozini	ME or DO or MON	PC	Sh Ta
Spain		S														No		No	
Sri Lanka	S	R	S													Yes, far north of country only (north of Anuradhapura) Elsewhere (includes all tourist areas)	PC W	DRF	
St Helena & Ascension																No			
St Kitts & Nevis		R														No			
St Lucia		R														No			
St Vincent & Grenadines		R														No			
Sudan	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Le	
Surinam	S	R	S													Yes, risk (except Paramaribo and coast)	ME or DO or MON	PC	Sh Le
Swaziland	R	R	S													Yes, high risk, eastern areas	ME or DO or MON *	Sh	
Sweden																No			
Switzerland																No			
Syria	S	R														Yes, only rural north, May-Oct	C	P	Sh Le
Taiwan		R														No			
Tajikistan	R	R														Yes, Jun-Oct, esp S border	PC	*	Le
Tanzania	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Ta	
Thailand	S	R														Yes, if staying Burma, Laos or Cambodia borders only Elsewhere	DO or MON W		
Tibet	S	R	S													No			
Tobago		R														No		Tc	
Togo	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Ta	
Trinidad		R														No		Tc	
Tunisia	S	R														No		Le	
Turkey	R	R														Yes, Syria border areas and plain around Adana Mar-Nov Elsewhere (includes all tourist areas)	C W	P	Le
Turkmenistan	S	R														Yes, June-Oct, in SE only	C	P	
Uganda	R	R	S	R												Yes, high risk	ME or DO or MON *	Sh Ta	
Ukraine	S	R														No			
United Arab Emirates		R														No		Le	
Uruguay		R														No		Tc	
USA																No			
Uzbekistan	S	R														Yes, very low risk extreme SE	W	Le	
Vanuatu	S	R														Yes, high risk	ME or DO or MON	PC	
Venezuela	S	R														Yes, Amazon basin, all areas to south and immediately to north of Orinoco River and Angel Falls No risk Caracas or Margarita	ME or DO or MON W	PC	Sh Tc
Vietnam		R														Low risk in cities, coast between Ho Chi Minh and Hanoi, Mekong Delta Elsewhere	W ME or DO or MON	*	
Virgin Islands		R														No			
West Papua (formerly Irian Jaya)	R	R														Yes, high risk	ME or DO or MON	PC	Sh Ta
Yemen	R	R	S													Yes, but no risk in Sana'a city	PC	DRF	Sh Le
Zambia	R	R	S													Yes, high risk	ME or DO or MON *	Sh Ta	
Zimbabwe	R	R	S													Yes, high risk Zambezi valley Yes, elsewhere below 1200m Nov-Jun Negligible risk Harare and Bulawayo	ME or DO or MON W	PC	Sh Ta

Key to malaria prophylaxis regimens

**Regimen MON**  
Malarone (atovaquone/proguanil), one tablet daily. Begin 1-2 days before departure, continue while in malarious area and for 7 days after return. ACMP suggest Malarone is safe for periods in continuous use of at least 1 year and possibly longer. Safety in pregnancy has not been established, and use in pregnancy should only be considered if benefit to the mother outweighs risk to fetus. Children use paediatric tablets.

**Regimen PC**  
Proguanil (Paludrine) 200mg daily plus chloroquine 300mg or 310mg base weekly (=Avloclor 2x250mg. Begin 1 week before travel and continue for 4 weeks after return.

**Regimen ME**  
Mefloquine, 1x250mg tablet weekly. ACMP suggest it is safe in continuous use for periods of at least 3 years. Begin at least 2 1/2 weeks before travel (at least 3 doses before arriving in malarious area). Avoid in first trimester of pregnancy and do not start pregnancy until 3 months after stopping mefloquine. Inadvertent use in first trimester is not an indication for termination. If pregnant women must travel to chloroquine-resistant falciparum area seek expert advice and conduct careful risk-benefit analysis. Use in any trimester may be justified.

**Regimen C**  
Chloroquine 300mg or 310mg base

weekly (=Avloclor 2x250mg). Begin 1 week before travel and continue for 4 weeks after return.

**Regimen P**  
Proguanil (Paludrine) 200mg daily. Begin 1-2 days before travel and continue for 4 weeks after return.

**Regimen W**  
No chemoprophylaxis but be aware of risk. Avoid mosquito bites and carry standby treatment if going to be far from medical facilities.

**Regimen DO**  
Doxycycline, 1 tablet of 100mg daily. Begin 1-2 days before travel and continue for 4 weeks after return. Not for children or pregnant women. Be aware of oesophageal ulceration, photosensitivity and very rare intracranial hypertension risk. Take with food or milk and avoid ingestion in late evening.

**Regimen DRF**  
In the alternative regimen column, DRF is Drug-Resistant-Falciparum regimen. DRF = ME or DO or MON

**Primaquine**  
A causal prophylactic that may be used when G6PD deficiency has been excluded in travellers with contraindications to other anti-malarials. Active against all species. Adult dose 30mg daily. Start 1-2 days before departure and continue for 7 days after return.

Children's doses of antimalarial prophylactics

Weight in kg	Chloroquine Proguanil	Mefloquine	Age
Under 6.0	0.125 adult dose 1/4 tablet	not recommended	term to 12 weeks
6.0 to 9.9	0.25 adult dose 1/2 tablet	0.25 adult dose 1/4 tablet	3 months to 11 months
10.0 to 15.9	0.375 adult dose 3/4 tablet	0.25 adult dose 1/4 tablet	1 year to 3 years 11 months
16.0 to 24.9	0.5 adult dose 1 tablet	0.5 adult dose 1/2 tablet	4 years to 7 years 11 months
25.0 to 44.9	0.75 adult dose 1 1/2 tablets	0.75 adult dose 3/4 tablet	8 years to 12 years 11 months
45kg and over	Adult dose 2 tablets	Adult dose 1 tablet	13 years and over

Doxycycline only above 12 years and the adult dose is given

Children's doses

Weight in kg	Number of tablets daily
11-20	1 paediatric tablet
21-30	2 paediatric tablets
31-40	3 paediatric tablets
Above 40	1 adult tablet

Specialist advice

For malaria advice: Malaria Reference Laboratory  
020 7636 3924 (health professionals only)  
Birmingham 0121 424 0357/3354/2357  
Edinburgh 0131 537 2822  
Glasgow 0141 300 1130  
Liverpool 0151 708 9393  
Oxford 01865 225 214