# International travel and health

Situation as on I January 2005



The information given in this publication is valid on the date of issue. It should be kept up to date with the notes of amendments published in the *Weekly epidemiological record* (http://www.who.int/wer).

Any comments or questions concerning this publication should be addressed to:

Information Resource Centre Communicable Diseases World Health Organization 1211 Geneva 27, Switzerland fax: (+41) 22 791 4285 email: cdsdoc@who.int

World Wide Web access: http://www.who.int/ith

WHO Library Cataloguing-in-Publication Data

International travel and health: situation as on 1 January 2005.

- 1. Communicable disease control 2. Travel 3. Vaccination-standards
- 4. Risk factors I. World Health Organization

ISBN 92 4 158036 4 (NLM Classification: WA 110) ISSN 0254-296X

#### © World Health Organization 2005

All rights reserved. Publications of the World Health Organization can be obtained from Marketing and Dissemination, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel: +41 22 791 2476; fax: +41 22 791 4857; email: bookorders@who.int). Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to Marketing and Dissemination, at the above address (fax: +41 22 791 4806; email: permissions@who.int).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Printed in Switzerland

## **Contents**

Acknowledgements		
Preface		vi
Chapter 1	Health risks and precautions: general considerations Travel-related risks Medical consultation before travel Medical kit and toilet items Travellers with pre-existing medical conditions and special needs	1 1 2 3
	Insurance for travellers Role of travel industry professionals Responsibility of the traveller Medical examination after travel	5
Chapter 2	Travel by air: health considerations Cabin air pressure Cabin humidity and dehydration Ozone Cosmic radiation Motion sickness Immobility, circulatory problems and Deep Vein Thrombosis (DVT) Diving Jet lag Psychological aspects Travellers with medical conditions or special needs Communicable diseases Aircraft disinsection Medical assistance on board Contraindications for air travel	12 12 14 14 14 15 15 15 15 15 22 22 23 23
Chapter 3	Environmental health risks Altitude Heat and humidity Ultraviolet radiation from the sun Foodborne and waterborne health risks Recreational waters Animals and insects	25 25 26 26 28 32 32

#### INTERNATIONAL TRAVEL AND HEALTH 2005

Chapter 4	Accidents, injuries and violence	42
	Traffic accidents	42
	Injuries and accidents in recreational waters	43
	Violence	44
Chapter 5	Infectious diseases of potential risk for travellers	46
	Modes of transmission and general precautions	46
	Specific infectious diseases involving potential health risks	
	for travellers	48
	Maps	75
Chapter 6	Vaccine-preventable diseases, vaccines and vaccination	87
	General considerations	87
	Vaccines for routine use	91
	Vaccines for selective use	102
	Mandatory vaccination	120
	Special groups	120
	Adverse reactions and contraindications	125
	International certificate of vaccination	130
Chapter 7	Malaria	132
	General considerations	132
	Cause	132
	Transmission	132
	Nature of the disease	132
	Geographical distribution	133
	Risk for travellers	134
	Precautions	134
	Protection against mosquito bites	135
	Chemoprophylaxis	135
	Long-term use of chemoprophylaxis	137
	Stand-by emergency treatment	137
	Treatment of <i>P. vivax</i> , <i>P. ovale</i> and <i>P. malariae</i> infections	139
	Special groups	140
	Special situations—multidrug-resistant malaria	142
	Countries and territories with malarious areas	150
Chapter 8	Blood transfusion	152
Country lis	st: vaccination requirements and malaria situation	154
Annex 1: Approved yellow fever vaccine producers		182
Annex 2: Li	st of countries endemic for yellow fever and list of countries	
	ing yellow fever vaccination for travellers coming from	
	c countries	183
		188
Annex 3: International Health Regulations		
Index of countries and territories		190
Index by subject		193

## **Acknowledgements**

WHO gratefully acknowledges the collaboration of travel medicine experts and end-users of *International travel and health* who have provided advice and information for the 2005 edition.

- Dr Ron H. Behrens, Department of Travel Medicine, Hospital for Tropical Diseases, London, United Kingdom
- Docteur Geneviève Brousse et Professeur Martin Danis, Département des Maladies Infectieuses, Parasitaires, Tropicales et Santé Publique, Groupe Hospitalier Pitié-Salpêtrière, Paris, France
- Dr Mads Buhl, Department of Infectious Diseases, Aarhus University Hospital, Aarhus, Denmark
- Dr Claus Curdt-Christiansen, Chief, Aviation Medicine Section, International Civil Aviation Organization (ICAO), Montreal, Canada
- Dr Nigel Dowdall, Director Health Services, British Airways, London, United Kingdom
- Dr Anthony Evans, Deputy Chief Medical Officer, Civil Aviation Authority, Gatwick Airport, United Kingdom
- Dr Shigeyuki Kano, Director, Department of Appropriate Technology, Development and Transfer, Research Institute, International Medical Center of Japan, Tokyo, Japan
- Dr Phyllis E. Kozarsky, Chief, Travelers' Health, Division of Quarantine, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA
- Dr Louis Loutan, Département de médecine communautaire, Hôpital cantonal de Genève, Geneva, Switzerland
- Dr Anne McCarthy, Tropical Medicine and International Health Clinic, Division of Infectious Diseases, Ottawa Hospital, Ottawa, Canada
- Dr Hans D. Nothdurft, Head, University Travel Clinic, Department of Infectious Diseases and Tropical Medicine, University of Munich, Germany
- Dr Monica Parise, Centers for Disease Control and Prevention, Atlanta, USA

Dr Eskild Petersen, Head, Department of Mycobacteria and Parasitic Infections, Copenhagen, Denmark

Dr Lars Rombo, Clinic of infectious diseases, Eskilstuna, Sweden

Dr Patricia Schlagenhauf, WHO Collaborating Centre for Travellers' Health Institute for Social and Preventive Medicine, University of Zurich, Zurich Switzerland

Dr Gerard Sonder & Dr Herbert Schilthuis, Landelijk Coördinatiecentrum Reizigersadvisering, Travel clinic, Amsterdam, The Netherlands

Professor Robert Steffen, Head, Division of Communicable Diseases, WHO Collaborating Centre for Travellers' Health, Institute of Social and Preventive Medicine, University of Zurich, Zurich, Switzerland

Dr Claude Thibeault, Medical Advisor, International Air Transport Association, Montreal, Canada

Dr Alfons Van Gompel, Head, Polyclinic-Travel Clinic, Associate Professor in Tropical Medicine, Institute of Tropical Medicine, Antwerp, Belgium

Dr Jane Zuckerman, Medical Director, Academic Centre for Travel Medicine and Vaccines and WHO Collaborating Centre for Travel Medicine, Royal Free and University College Medical School, London, United Kingdom

The following WHO personnel made contributions in their fields of expertise:

Editor 2005: Dr Isabelle Nuttall

Assistant: Christèle Wantz - Maps: Anne Guilloux

Contributors (2003–2005): Dr Oya Afsar, Dr Hoda Atta, Dr Roberta Andraghetti, Dr Bruce Aylward, Dr Andrea Bosman, Dr Sylvie Briand, Dr Keith Carter, Dr Claire-Lise Chaignat, Dr Eva-Maria Christophel, Dr Alya Dabbagh, Dr Mikhail Ejov, Dr Pierre Formenty, Dr Max Hardiman, Dr Vijay Kumar, Dr Daniel Lavanchy, Dr Angela Merianos, Dr François-Xavier Meslin, Dr Mike Nathan, Dr Kevin Palmer, Dr William Perea, Dr Aafje Rietveld, Dr Pascal Ringwald, Dr Magda Robalo, Dr Cathy Roth, Dr Maria Santamaria, Dr Krongthong Thimasarn, Dr Peter Trigg (retired), Dr David Wood, Dr Morteza Zaim

### **Preface**

International travel is undertaken by large, and ever increasing, numbers of people for professional, social, recreational and humanitarian purposes. More people travel greater distances and at greater speed than ever before, and this upward trend looks set to continue. Travellers are thus exposed to a variety of health risks in unfamiliar environments. Most such risks, however, can be minimized by suitable precautions taken before, during and after travel, and it is the purpose of these pages to provide guidance on measures to prevent or reduce any adverse consequences for travellers' health.

The book is addressed primarily to medical and public health professionals who provide health advice to travellers, but it is also intended to provide guidance to travel agents and organizers, airlines and shipping companies. As far as possible, the information is presented in a form readily accessible to interested travellers and non-medical readers. For medical professionals, to whom other sources of additional details are available, essential information is given as concisely as possible.

The book is intended to give guidance on the full range of significant health issues associated with travel. The roles of the medical profession, the travel industry and travellers themselves in avoiding health problems are recognized. The recommendations address the health risks associated with different types of travel and travellers.

Air travel and its associated health risks receive great emphasis, reflecting the enormous recent expansion in travel by air, particularly in long-haul flights. In this edition, the chapter on travel by air has been revisited by a group of experts to be more informative. Business travel has increased dramatically, with frequent travellers now forming a substantial proportion of the total. Large numbers of travellers move far beyond the customary leisure and business centres, both for professional purposes and for pleasure, and there are now more elderly travellers, some of whom have pre-existing health problems. The risks and precautions specifically concerning infants and young children who travel also require special attention.

Information is given on environmental factors that may have adverse effects on travellers' health and well-being. The main infectious diseases that pose potential health threats for travellers are described individually, with the corresponding preventive measures. The worldwide distribution of the major infectious diseases is shown in maps, and—where possible—extensive text has been replaced by lists and tables. A separate chapter is devoted to information on the vaccine-preventable diseases and the corresponding vaccines, as well as guidance on the selection of vaccines for individual travellers. Sources of additional information are included with each chapter.

The printed edition is now published only every second year but an Internet version (www.who.int/ith) allows on-going updating and provides easy links to other information, such as news of current disease outbreaks of international importance.