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Travel medicine: being well prepared
for holidays or long term stays abroad

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Agenda

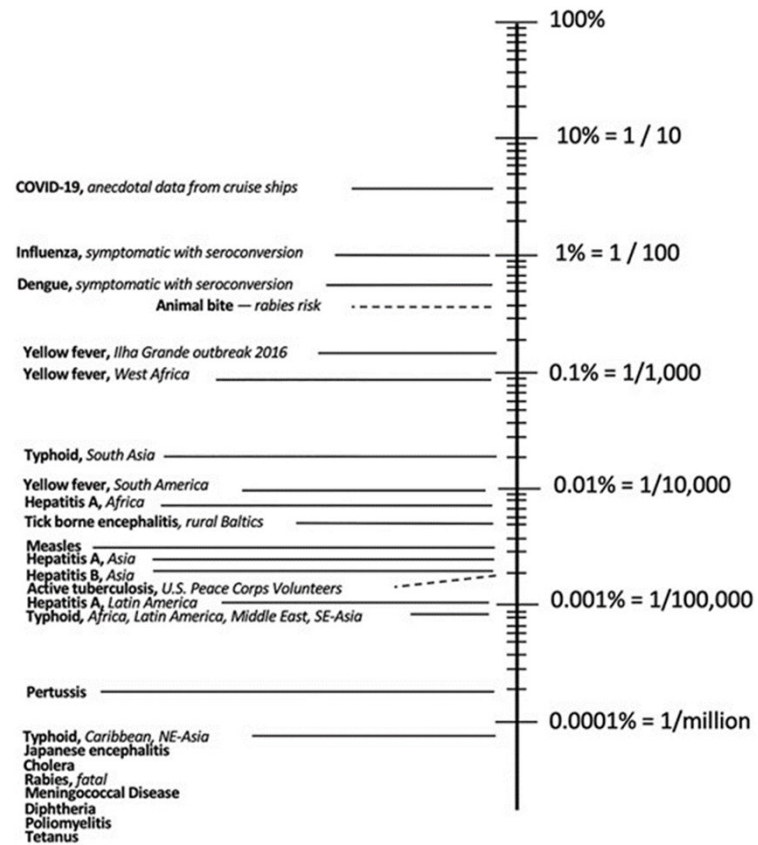
- Health-risks while travelling
- Vaccine-preventable diseases
 - Rabies
- Prevention of mosquito-transmitted diseases
- Travellers' diarrhoea
- Drugs & first aid kit
- Long-term travellers & expats



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Health-risks while travelling

Risk for travel-associated diseases



Incidence vs. impact of travel-associated diseases

Impact	< 0.1	0.1-0.9	1-9	10-99	≥ 100
VERY HIGH: CFR > 10% and/or Frequent sequelae	<ul style="list-style-type: none"> Japanese encephalitis Rabies Meningococcal disease Diphtheria Poliomyelitis Tetanus 			<ul style="list-style-type: none"> Yellow fever, South America 	<ul style="list-style-type: none"> Yellow fever: - in outbreak - West Africa
HIGH: CFR 1-10% and/or Sequelae			<ul style="list-style-type: none"> Tick-borne encephalitis, rural Baltics 		
INTERMEDIATE: CFR ± 1% and Hospitalization > 10%	<ul style="list-style-type: none"> Typhoid: NE-Asia, Caribbean Cholera 	<ul style="list-style-type: none"> Typhoid: Africa, Latin America, Middle East, SE-Asia Pertussis 	<ul style="list-style-type: none"> Hepatitis A Hepatitis B Measles 	<ul style="list-style-type: none"> Typhoid: South Asia 	<ul style="list-style-type: none"> Dengue
LOW: CFR < 1% and Hospitalization < 10%		<ul style="list-style-type: none"> Pertussis 		<ul style="list-style-type: none"> Mpox (?) 	<ul style="list-style-type: none"> COVID-19 Influenza [Risk of rabies, PEP indicated]



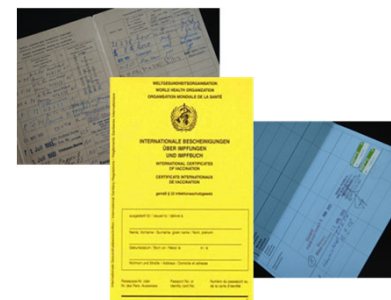
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Vaccine-preventable diseases

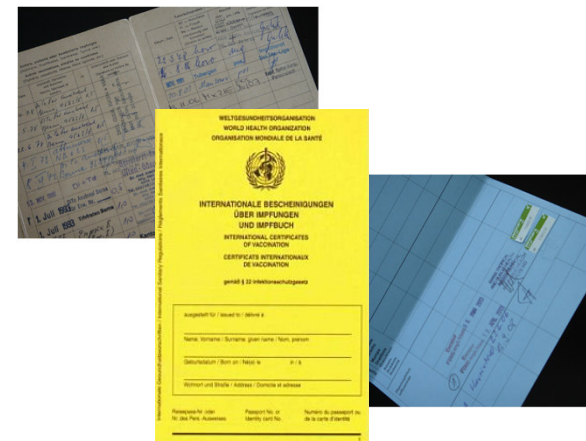
IMPORTANT

Standard vaccinations according to Swiss vaccination recommendations!



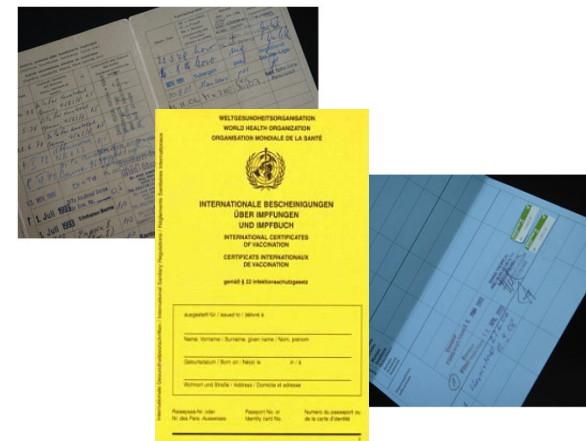
Travel-specific vaccinations – short-term trips

- Hepatitis A
- Yellow Fever
- Rabies
- Typhoid Fever
- Japanese Encephalitis
- Meningococcal Meningitis



Travel-specific vaccinations – long-term trips

- Hepatitis A
- Yellow Fever
- Rabies
- Typhoid Fever
- Japanese Encephalitis
- Meningococcal Meningitis
- Hepatitis B





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Rabies

Transmission of rabies

- Contact with saliva of an infected animal, e.g. **bite, scratch or lick over an open wound** (rare: organ transplantation)
- Dogs, cat, monkeys, bats, raccoon etc
- Infected animals do not have to appear «rabid»
- **Children at highest risk** because bites more often to hands or face



Postexposure prophylaxis

With preexposure prophylaxis

- Two vaccine doses with an interval of 3 days

Without preexposure prophylaxis

- Four vaccine doses within 14 days
- Immunoglobulines around the wound

Postexposure prophylaxis has to happen as fast as possible

Important to know for travellers

- **2% of travellers have a potential rabies contact** → immediate postexposure prophylaxis warranted
- Mortality of rabies almost 100%, no treatment available
- No possibility to detect an infection before onset of symptoms
- The risk of rabies cannot be assessed based on the behaviour of the animal
- Availability of postexposure prophylaxis while travelling:
 - Vaccines / immunoglobulines not always available (< 10% of travellers receive immunoglobulines abroad after a potential contact)
 - Immunoglobulines are expensive
 - PEP interferes with travelling plans



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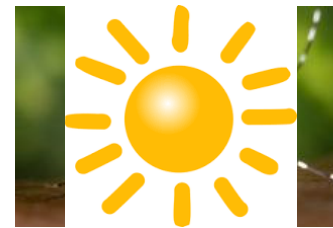


Prevention of Mosquito-
transmitted diseases

Mosquito protection

- bright, long-sleeved clothes
- mosquito repellents
 - skin: DEET (20-30%), Icaridin (20%)
 - clothes: Permethrin
- sleeping area: air conditioning or mosquito net

Around the clock!



Aedes spp.

Yellow Fever

Dengue

Zika

Chikungunya

Japanese Encephalitis

West Nile Fever

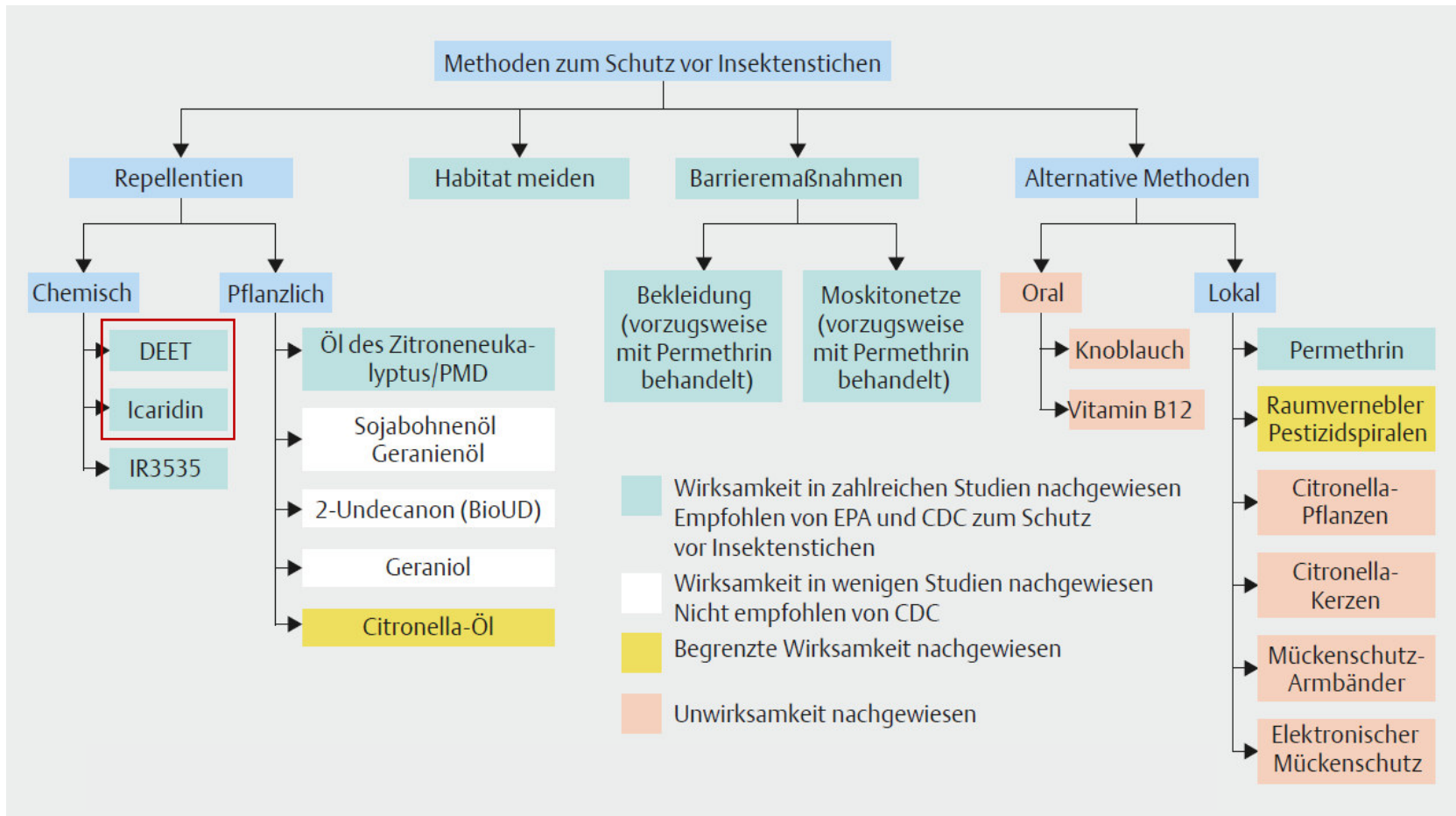


Culex spp.



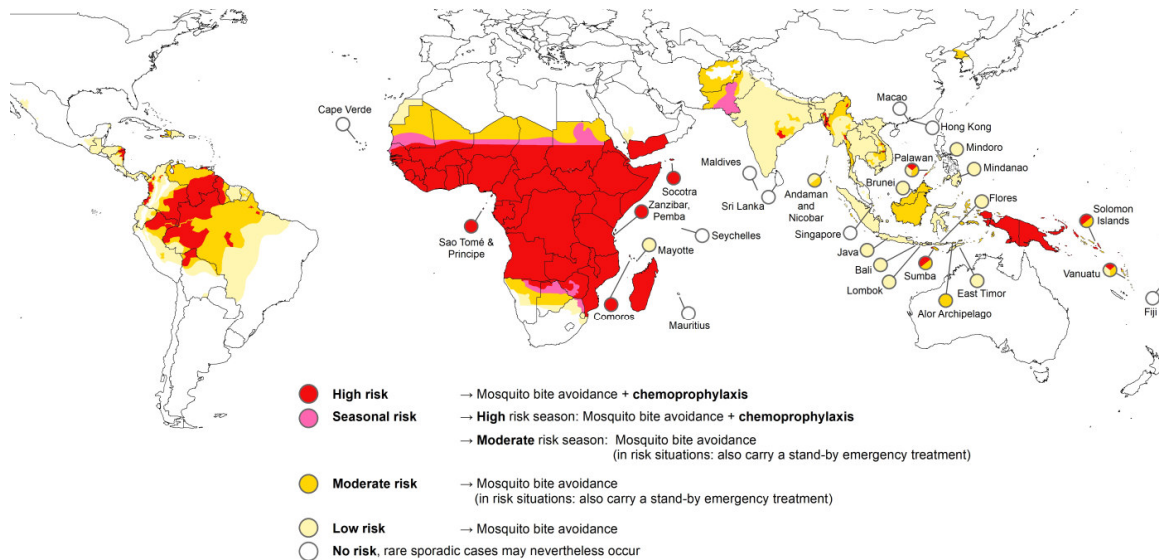
Anopheles spp.

Malaria



Malaria risk

Malaria 2023



This map should always be used in combination with the recommendations on the corresponding country page on www.healthyttravel.ch

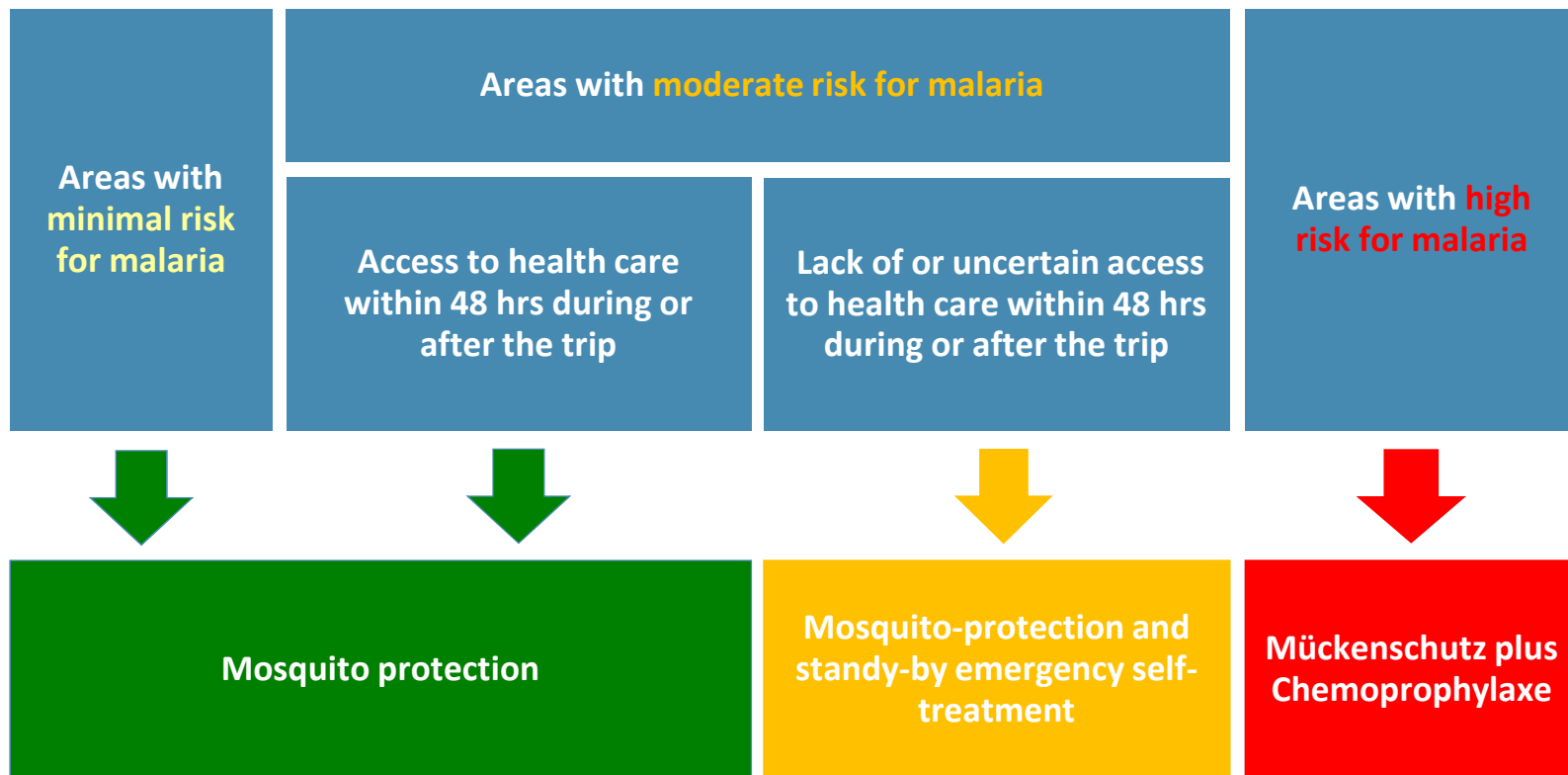
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Source: World Malaria Reports 2020, 2021, 2022, adapted by Olivia Veit, ECTM

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Strategies for travellers to malaria endemic areas



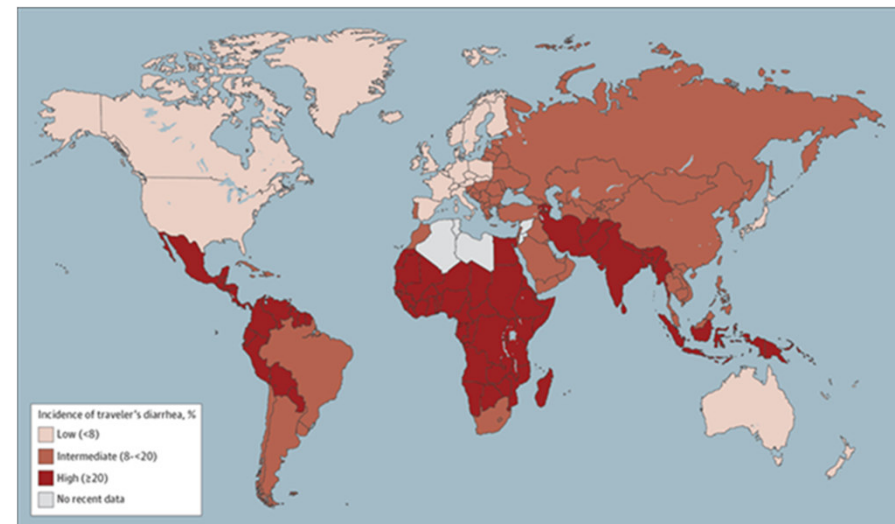


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Travellers' Diarrhoea

Incidence & risk factors

- **Incidence:** 10-40% of all travellers
- **Risk factors:**
 - younger age
 - travel duration
 - travel destination
 - travelling style
 - back packer
 - luxury hotels
 - use of proton pump inhibitors



«Cook it, boil it, peel it, or leave it»

- 2-3% of all travellers are compliant
- **the protective effect is not proven!**

Use your common sense!

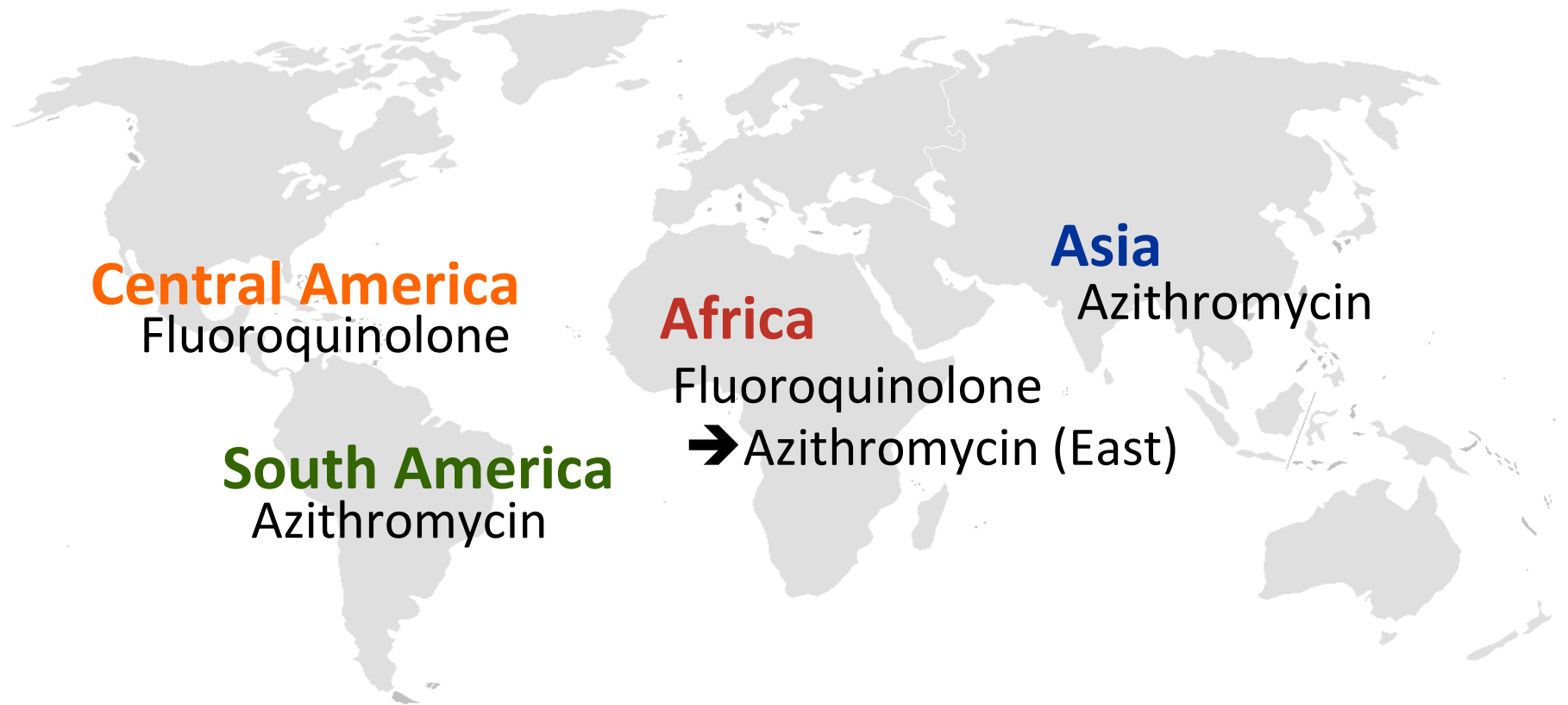


Important!

Travellers' diarrhoea is mostly self-limiting



Empirical treatment – which antibiotic where?



Central America
Fluoroquinolone

South America
Azithromycin

Africa
Fluoroquinolone
→ Azithromycin (East)

Asia
Azithromycin



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Drugs & first aid kit

Important points

- leave drugs in their original packages
- some drugs are temperature sensitive → consider storage
- put drugs in your hand luggage
- be careful with potentially forbidden substances (opioids, benzodiazepines etc)
- long-term travellers/expats: check local availability of drugs
- **international shipment of drugs very, very difficult**

Source: United Nations Office on Drugs and Crime
"Guidelines for National Regulations Concerning Travellers under Treatment with Internationally Controlled Drugs"

Model form of a certificate for the carrying by travellers under treatment of medical preparations containing narcotic drugs and/or psychotropic substances

A. **Country, date and place of issue**
Country: *****
Date and place of issue: *****
Period of validity:* *****

B. **Prescribing physician**
Last name, first name: *****
Address: *****
Phone (incl. country code): *****
GLN (EAN-LCode): *****

C. **Patient**
Last name, first name: *****
Sex: *****
Place of birth: *****
Date of birth: *****
Home address: *****
Number of passport or of identity card: *****
Intended country of destination: *****

D. **Prescribed medical preparation**
Trade name of drug (or its composition): *****
Dosage form: *****
Number of units (tablets, ampoules etc.): *****
International name of the active substance: *****
Concentration of active substance: *****
Total quantity of active substance: *****
Duration of prescription days: *****

E. **Remarks:** *****

*A three month period of validity from the date of issue is recommended.

What to take with you

- **pre-existing medication**
- pain killers & antipyretics (e.g. paracetamol, ibuprofen)
- drugs against diarrhoea (z.B. loperamid)
- anti-emetic drugs
- drugs against travelling sickness
- antihistamines
- topical drugs against itching
- disinfectants
- mosquito repellents
- sun protection

HIV-PEP ?!?!



Additional things

- **fever thermometer**
- tweezers
- scissors
- band aid
- elastic bandage



Special situations



Travelling with children:

- oral rehydration solution
- **CAVE:** suppositories melt in the heat (oral formulation better)

Travelling to remote areas:

- antibiotics (azithromycin, levofloxacin)



For women:

- hygiene products (tampons, sanitary pads) are difficult to get in some areas



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Long-term travellers & expats

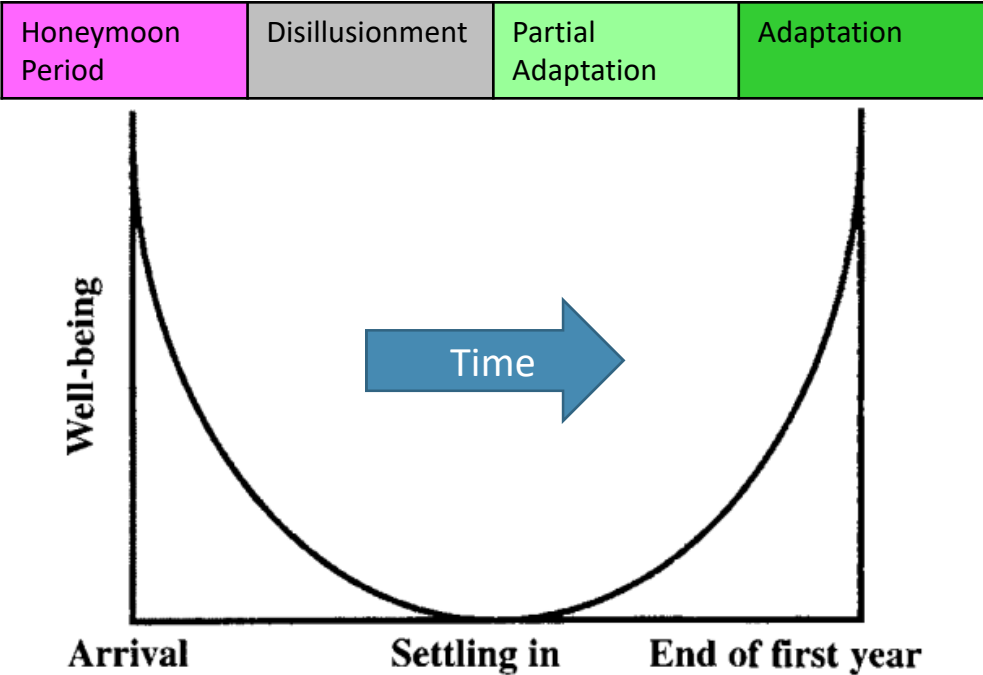
Morbidity of expats vs. other travellers (1)

Diagnosis	Morbidity/1000 ill-returned travellers		p-value
	Expat	Other traveller	
Malaria	84	62	< 0.01
Acute Diarrhoea	136	233	< 0.01
Amoebiasis	32	17	< 0.01
Giardiasis	26	32	0.10
Typhoid & Paratyphoid	4	5	0.83
Schistosomiasis	15	9	< 0.01

Morbidity of expats vs. other travellers (2)

Diagnosis	Morbidity/1000 ill-returned travellers		p-value
	Expat	Other traveller	
HIV	7	2	< 0.01
Latent TB	19	8	< 0.01
Active TB	4	2	0.02
Depression	8	3	< 0.01
Anxiety & Stress	7	3	< 0.01

Culture shock – the U-curve hypothesis



Summary

- plan well in advance
- get the necessary vaccines (baseline vaccination and travel vaccinations)
- yellow fever vaccinations might be mandatory
- **preventive measures:** mosquito protection, food hygiene, etc
- first aid kit: bring enough but not too much