

# Traveller Information Sheets

## Mosquito Avoidance Measures

*Preventing mosquito bites:  
Some educational tips from Dr. Felie Peel (RAC).*

~ 1 ~

*Who are we?*

- Maitaville Medical Complex is a general practice offering many services, one such service is a travel clinic.
- We joined the Travel Clinics Australia franchise in 2001.
- We are a member of The International Society of Travel Medicine.
- We are a dedicated group of experienced doctors and nurses.

**International Society of Travel Medicine**  
Promoting healthy travel worldwide

~ 2 ~

*Preventing mosquito bites*

The following information is to help you select the best methods of avoiding mosquito bites during your overseas travel

- **1. Mosquito bite avoidance**
- **2. Selection of clothing**
- **3. Sleeping arrangements**
- **4. Use of insecticides and spatial repellents**
- **5. Topical repellents**
- **6. Appropriate accommodation**

~ 3 ~

*!- Mosquito bite avoidance*

- Travelling in mosquito endemic areas is risky for all travellers and can be fatal for some.
- Be aware of the risks and be prepared to avoid high risk destinations.
- Come and see us, we've got the answers!

<https://www.who.gov/travel/conditions>

~ 4 ~

*2- Selection of clothing to avoid mosquito bites*

- Clothing should cover all exposed extremities, be light in colour to limit mosquitoes landing on you.
- Avoid low-key coloured clothing, scented soaps, shampoo and perfume as these will make you look and smell appealing to the mosquito.

**DO NOT:**

- ❑ Long sleeve shirts
- ❑ Long leg trousers
- ❑ Hats
- ❑ Bandanas
- ❑ Hats
- ❑ Mosquito head net
- ❑ Wash clothing in permethrin before you get!

*Wash clothing in permethrin – it is safe for everyone!*

~ 5 ~

*3- Sleeping arrangements to prevent mosquito bites*

These double nets hang from the ceiling. They are generous enough inside to accommodate 2 adults. Double nets are an excellent sleeping arrangement for breastfeeding mothers and co-sleeping families.

These single nets hang from the ceiling. Once tucked under the mattress they are mosquito proof.

Structured stanc alone nets are ideal for babies. The floor can be removed to make the net fit over a cot.

*All mosquito nets can be treated with permethrin*

~ 6 ~

#### 4- Use of insecticides and spatial repellents to prevent mosquito bites



Mosquito coils, knockdown sprays and vapors must be used in well-ventilated areas.  
 Certain essential oils prevent mosquito bites, but not necessarily disease.  
 Both also cause allergic reactions. The safety profile is unknown for infants, pregnancy or breastfeeding women.  
 2% w/v of an effective scent can deter mosquito bites and nuisance bites. The safety profile is unknown for infants, pregnancy or breastfeeding women.  
 Sulfic and flame-β should NOT be recommended as an efficacy in mosquito bite prevention has been proven.

The use of these products are controversial, due to the potential to cause other health problems.

~ 7 ~

#### 5- Topical repellents



- DEET containing repellents are considered the **gold standard**.
- Picaridin formulations and oil of lemon eucalyptus are effective if DEET containing products cannot be used.
- Citronella and IR3535 were not shown to be very effective.

~ 8 ~

#### 6- Appropriate accommodation in mosquito areas

- Air-conditioned environments are not hospitable for mosquitoes. This is the ideal choice in accommodation selection.
- Accommodation with screened windows and door is sufficient, however other protective measures need to used, such as bed nets and topical insect repellents.



~ 9 ~

#### Which method will work best?



Using a combination of all 6 methods will prevent the mosquito's ability to access skin to bite!

~ 10 ~

### Reference List

- (1) Bouldouyre M, Colin de Verdiere N, Pavie J, De Castro N, Ponscarne D, Hamane S, Rachline A, Ferret S, Molina J 2012, "Quality of Travel Health Advice in a French Travel Medicine and Vaccination Center: A Prospective Observational Study", *Journal of Travel Medicine*, vol 19, no 2, pp76-83
- (2) Chen L, Zeind C, Mackell S, LaPointe T, Mutsch M, Wilson M 2009, "Breastfeeding Travelers: Precautions and recommendations", *Journal of Travel Medicine*, vol 17, no 1, pp 32-47
- (3) Goodyer L, Song J 2013, "Mosquito Bite-Avoidance Attitudes and Behaviours in Travellers at Risk of Malaria", *Journal of Travel Medicine*. Viewed 23 August 2013. <<http://onlinelibrary.wiley.com/doi/10.1111/jtm.12053/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false>>
- (4) Goodyer L, Croft A, Frances S, Hill N, Moore S, Onyango S, Debboun M 2010, "Expert Review of the Evidence Base for Arthropod Bite Avoidance", *Journal of Travel Medicine*, vol 17, no 3, pp 182-192
- (5) Hargarten S 1994, "Injury Prevention: A Crucial Aspect of Travel Medicine", *Journal of Travel Medicine*, vol 1, no 1, pp 48-50. Viewed 23 August 2013, <<http://onlinelibrary.wiley.com/doi/10.1111/j.1708-8305.1994.tb00555.x/abstract>>
- (6) Hartjes L, Baumann L, Henriques J 2009, "Travel Health Risk Perceptions and Prevention Behaviours of US Study Abroad Students", *Journal of Travel Medicine*, vol 16, no 1, pp 338-343
- (7) Kimura M, Wataya Y 2000, "Inappropriate Use of Mosquito Bed Nets in the Prevention of Malaria: Lessons from a Familial Cluster of Ovale Malaria", *Trans. 6<sup>th</sup> Conference of the International Society of Travel Medicine in Montreal*, June 1999, vol 7, pp 338-339
- (8) Laver S, Wetzels J, Behrens R 2001, "Knowledge of Malaria, Risk Perception, and Compliance with prophylaxis and personal and environmental Preventative Measures in Travelers Exiting Zimbabwe from Harare and Victoria Falls International Airport", *Journal of Travel Medicine*, vol 8, no 6, pp 298-303
- (9) Nasci R, Zielinski-Gutierrez E, Wirtz R, Brogdon W 2014, "Protection against Mosquitoes, Ticks & Other Insects & Arthropods", in *Centers for Disease Control and Prevention*, Oxford University Press, viewed 23/08/2013, <<http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-2-the-pre-travel-consultation/protection-against-mosquitoes-ticks-and-other-insects-and-arthropods>>
- (10) Neave P, Jones C, Behrens R 2010, "A Review of Risk Factors for Imported Malaria in the European African Diaspora", *Journal Of Travel Medicine*, vol 17, no 5, pp 346-350
- (11) Pile J, Henchal E, Christopher G, Steele K, Pavlin J 1999, "Chikungunya in a North American Traveler", *Journal of Travel Medicine*, vol 6, no 2, pp 137-139. Viewed 23 August 2013 <<http://onlinelibrary.wiley.com/doi/10.1111/j.1708-8305.1999.tb00845.x/abstract>>
- (12) Stauffer W, Konop R, Kamat D 2001, "Traveling with Infants and Young Children Part I: Anticipatory Guidance: Travel Preparation and Preventative Health Advice", *Journal of Travel Medicine*, vol 8, no 5, p 254-259
- (13) Stauffer W, Kamat D, Magill A 2003, "Travelling with Infants and Children. Part IV: Insect Avoidance and Malaria Prevention", *Journal of Travel Medicine*, vol 10, no 4, p225-240
- (14) Wadhvaniya S, Hyder A 2013, "Pre-Travel Consultation Without Injury Prevention Is Incomplete", *Journal of Travel Medicine*, vol 20, no 4 p217-220
- (15) Waner S, Durrheim D, Leggat P, Ross M 2001, "Preventing Infectious Diseases in Long Term Travelers to Rural Africa", *Journal of Travel Medicine*, vol 8, no 6, pp 304-308
- (16) Webb C, Russell R 2011, "Advice to Travelers on Tropical Insect Repellent Use Against Dengue Mosquitoes in Far North Queensland, Australia", *Journal of Travel Medicine*, vol 18, no 4 pp282-283
- (17) World Health Organisation 2011, *International travel and health: Environmental Health Risks*, WHO, Switzerland (p.44, 45)
- (18) Zimmermann R, Hattendorf J, Blum J, Nuesch R, Hatz C 2013, "Risk Perception of Travelers to Tropical and Subtropical Countries Visiting a Swiss Travel Health Center", *Journal of Travel Medicine*, vol 20, no 1, p3-10