

# Travel Medicine Case Studies

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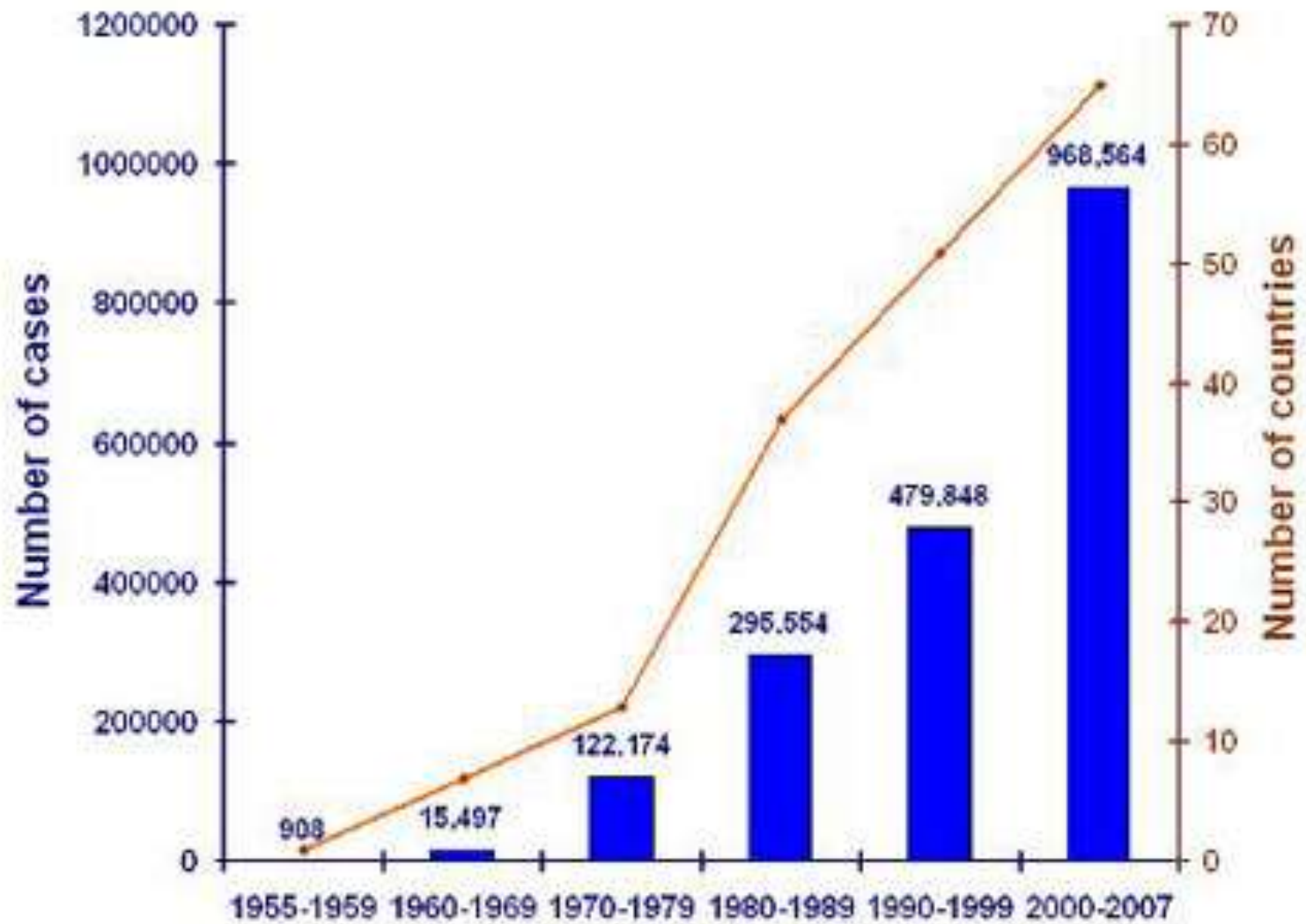
# Case 1

- 45 y.o. woman, bringing her 10 year old son in for follow up of his mild asthma, mentions that the family is off to Cairns for the school holidays.
- What advice should she receive?

# Dengue

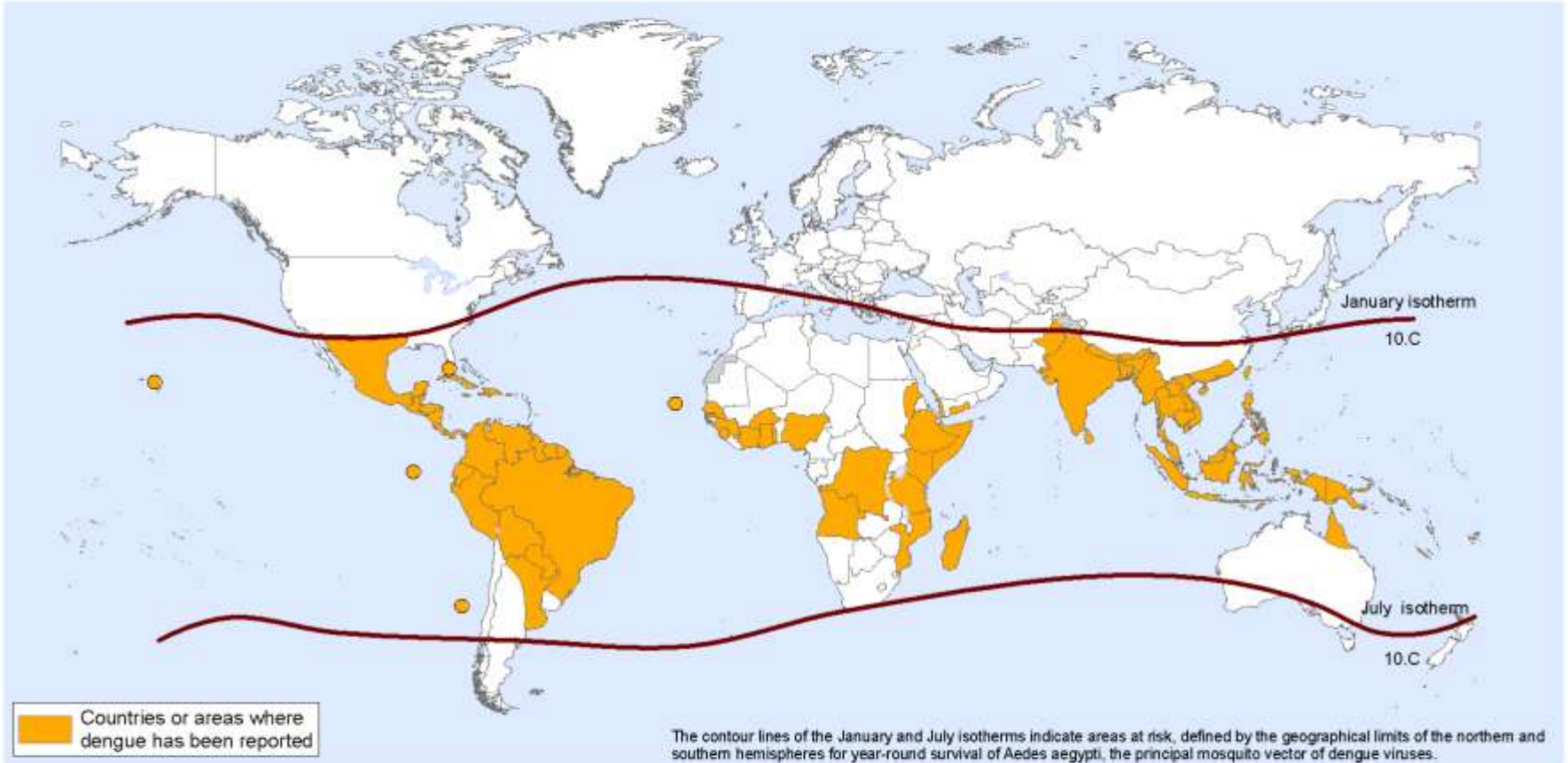
- 4 serotypes – ssRNA, enveloped flavivirus
- Spread by *Aedes* mosquitoes
- Almost universal in the tropics
- ‘flu-like illness – fever, headache, myalgia
- Risk of DHF/ DSS with 2<sup>nd</sup> infection
- No vaccine yet





WHO data from Denguevirusnet

## Dengue, countries or areas at risk, 2009



The boundaries and names shown and the designations used on this map 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.

Data Source: World Health Organization  
Map Production: Public Health Information and Geographic Information Systems (GIS)  
World Health Organization



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# Other viruses in Australia

- Bats
  - Rabies
  - Hendra
    - Pulmonary oedema/ encephalitis
- Mosquitoes
  - Ross River & Barmah Forest
    - Fever, rash, arthralgia
  - Murray Valley Encephalitis & Kunjin
    - Encephalitis

## Chikungunya, countries or areas at risk



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# Case 2

- 86 y.o. man, and his wife enquire about yellow fever shots as they are off to climb Kilimanjaro in three weeks
- B/G pacemaker for 3<sup>rd</sup> degree block 2005
  - Lost to follow up by cardiology
- Have spent all their money on equipment so don't want to waste any more on vaccines
- What issues need to be raised?



# Issues

- Pacemaker check
- Personal security
- Other vaccinations
  - HAV/ typhoid/ 'flu/ rabies
- Altitude sickness

# The elderly traveller

- More pre-existing conditions
  - More medications
  - Higher risk of death from natural causes
  - Issues with insurance
- Higher risk of adverse outcomes from
  - Heat/ cold exposure
  - Malaria
  - Dehydration
- Greater risk of RTAs

# Advice to elderly

- Plan well
  - Look for ways to reduce the exertion of travel
  - Begin an exercising weeks before departure
  - Know what sort of weather to expect
- Pretrip medical
- Check treatment options at destination
- Take
  - Copies of medical records, esp ECG
  - Contact numbers of relatives (if you become confused)
  - Spare glasses/ hearing aid batteries/ denture adhesive
- Be disciplined about
  - Mosquito avoidance
  - Adequate hydration
  - Food and drink rules

# Altitude sickness

- Potentially fatal condition
- Can occur at any altitude
  - Usually above 2500m
- Acute mountain sickness
  - Headache, nausea, LoA, vomiting, poor sleep
- High altitude cerebral oedema
  - Lethargy, confusion, ataxia, death (24 hours)
- High altitude pulmonary oedema
  - Progressive dyspnoea, cough, weakness, death (rapid)

# Altitude sickness

- High risk destinations
  - Kilimanjaro
  - Nepal (esp base camp trekkers)
  - Tibet
  - Inca trail
  - Lake Titicaca
  - Denver Colorado
- Flying to altitude increases risk
  - Lhasa (Tibet), La Paz (Bolivia), Cuzco (Peru)

# Altitude advice

- Ascend slowly
- If sick GO DOWN!
  - Don't try to be a hero
- First 2 days
  - Acclimatise before ascending
  - Avoid alcohol
  - Mild exercise
- Consider acetazolamide (diamox)
- Expert opinion for pre-existing conditions

# Acetazolamide

- Carbonic anhydrase inhibitor
- HCO<sub>3</sub> diuresis
- Decreases blood pH, increases respiration
- Usual dose 125mg bd for 2-3 days
- Side effects
  - Paraesthesia & Nausea
  - Makes beer taste unpleasant
- Caution – sulphonamides/ penicillin allergy

# Other drugs

- Ginkgo biloba 120mg bd pre-ascent
  - Showing some promise as diamox alternative
  - Varying formulations make evaluation difficult
- Dexamethasone for HACE
  - 4mg 6hrly during ascent, buys time
- Nifedipine for HAPE
  - 20mg extended release 8-12 hrly, buys time
- Tadalafil
  - ? Prevents HAPE – under evaluation



# Case 3

- 26 y.o. man travelling alone to Thailand for 10 days comes to you for travel vaccines
- During the routine advice, he suddenly asks, “It’s not that easy to get HIV, is it?”

# STDs and Travel

- Travellers abroad
  - 25% leave intending to have sex
  - 50% of travellers will have sex
  - A significant proportion unprotected
  - Men sleep with locals
  - Women sleep with fellow travellers
    - You do the maths

# Advice for travellers

- STDs are very common in many destinations
- STDs are common in travellers
- Nobody has a body worth dying for
  - Be savvy about what you do and with whom
- If you plan to have sex, plan to make it safe
  - Take condoms, use them
  - Be prepared for an unfavourable response
- If you don't plan to have sex, plan to decline it
  - Especially business travel
  - Consider taking condoms anyway
- Children are NOT 'fair game'

# Case 4

- 47 y.o. single lady comes to you prior to departure to Nigeria
- On enquiry, she is going to visit a friend
- Takes ages deciding which vaccines she wants
- Argues with you when told she should wear long sleeves and trousers in the tropics
- What needs further input?

# The traveller who shouldn't

- Internet scams abound
- Tourist brochures lie
- Common sense is not so common
- Do travel agents have a duty of care?
- Ask the reason for the trip
  - Especially if it is to an unusual destination
  - Be aware that people sometimes lie
- The travel consult may be the last opportunity to avert disaster

# Case 5

- 23 year old personal assistant, Rx'd for chlamydia 6 years ago, now G1P0 sees you for antenatal visit at 8 weeks
- Mentions that she and her partner are off to Vanuatu for a 'babymoon'
- Doesn't want to use DEET because she read in a magazine article that it can cause hypospadias
- What issues need to be addressed?

# Use of biocides and insect repellents and risk of hypospadias

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## ABSTRACT

**Background** The relationship between the use of biocides and insect repellents and the risk of hypospadias was examined in a large case-control study in the South East of England.

**Methods** A case-control study was carried out among 471 cases of hypospadias referred to surgeons, and 490 randomly selected population-based controls, born between 1 January 1997 and 30 September 1998. Telephone interviews were conducted between September 2000 and March 2003. The questionnaire included information on demographic, lifestyle and environmental factors, including the use of biocides and insect repellents, during pregnancy. A total biocide score was created from summing positive responses to an eight-item biocide exposure questionnaire.

**Results** The use of insect repellent (adjusted OR 1.81, 95% CI 1.06 to 3.11) during the first trimester of pregnancy was associated with risk of hypospadias, but none of the biocides, or indicators for them, except for the total biocide score for the highest two exposure categories (score 3; adjusted OR 1.73, 95% CI 1.02 to 2.94, and scores 4 and 5 combined; adjusted OR 2.98, 95% CI 1.01 to 8.78) showed statistically significant associations.

**Conclusion** The authors found an association between the use of insect repellent and total biocide score and risk of hypospadias. In particular, the use of insect repellent warrants further investigation, specifically in relation to type, content and frequency of use since this information was missing in the current study.

## What this paper adds

- ▶ Relatively little is known about the environmental risk factors for hypospadias.
- ▶ This study shows for the first time evidence of an association between insect repellent use and hypospadias.
- ▶ Further, it also shows an association between multiple pesticides use and hypospadias.
- ▶ Resources are needed to further investigate these risk factors, particularly insect repellent use.
- ▶ No changes in practices are recommended until further evidence is available.

The aim of the present study was to examine relationships between the use of biocides, or indicators of their use, and the use of insect repellents and the risk of hypospadias in a large case-control study in the South East of England.

## METHODS

The methods have been described previously.<sup>18</sup> Briefly, we identified hypospadias cases born within a 21-month period (1 January 1997 to 30 September 1998) referred to surgeons in the South East of England. Cases were eligible if there was an anatomically positioned urethral orifice requiring surgery, with no major accompanying anomaly suggesting it was part of a syndrome. The study region included the health regions of North Thames, South Thames

# The pregnant traveller

- Issues

- Increased complexity of travel
  - Insurance and airlines
- Increased risk of needing medical care
  - Including blood transfusions
- Increased risk of things going wrong
  - DVT
- Increased risk when things do go wrong
  - Malaria / Hepatitis E
- Increased difficulty with prophylaxis
  - Contra-indicated antimalarials & vaccines



# Advice for the pregnant traveller

- Safest time is second trimester
- Confirm in utero pregnancy
- Check
  - Travel not contra-indicated (obstetric advice if in doubt)
  - Airline policy
  - Availability of medical facilities
  - Insurance cover
- Try to avoid missing antenatal care
- Killed vaccines probably safe – AVOID live vaccines
- Avoid malaria areas
- Strict adherence to food & drink rules
- NO scuba diving
- Wear seatbelts – plane & car

# Case 6

- 46 y.o. football player on six month coaching contract to Siberia comes to you for shots
- Mentions that he has been invited to go bear hunting
- What are the issues?

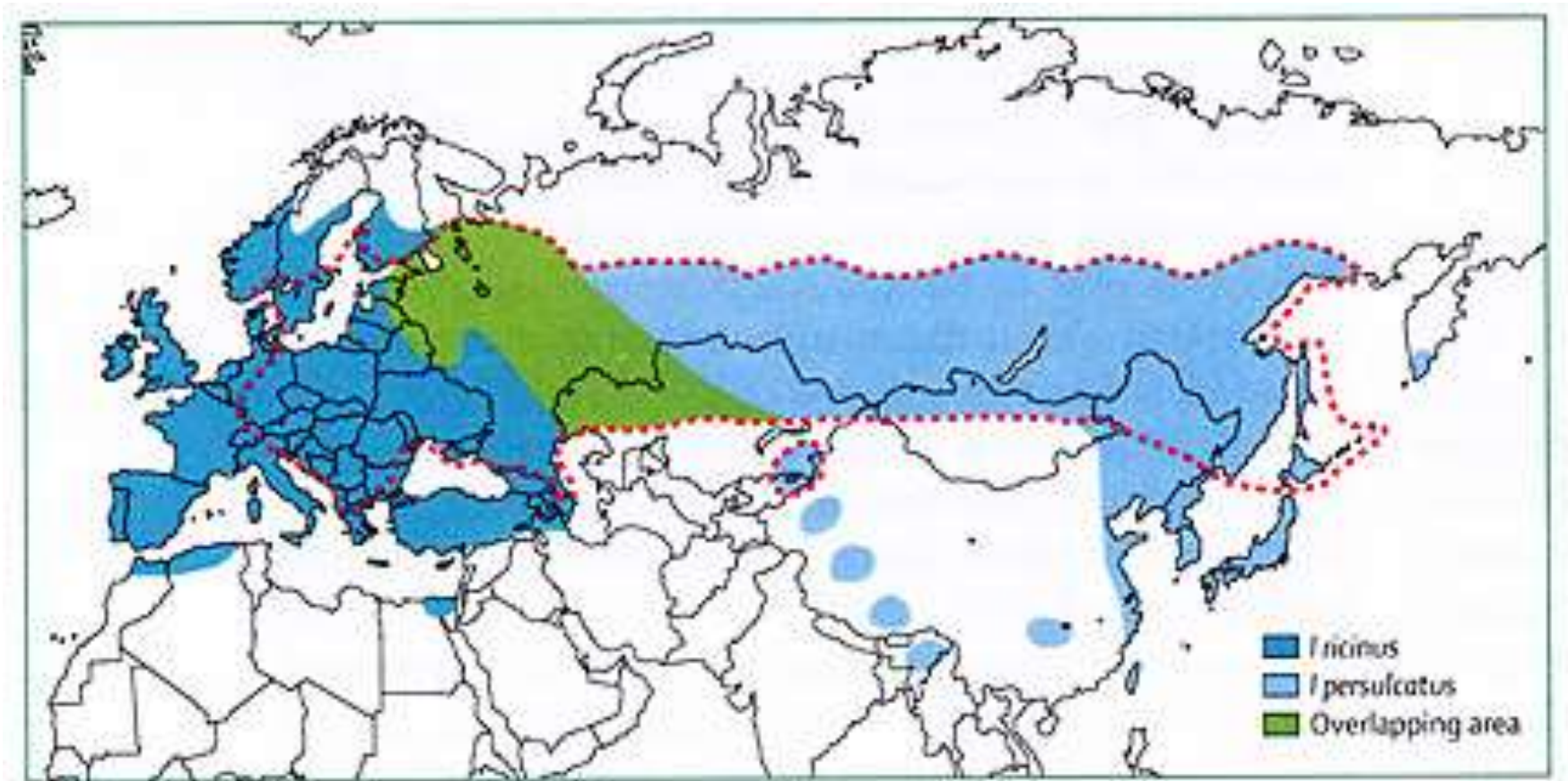
# Business or pleasure?

- It is worth asking what recreational interests business travellers intend to pursue abroad

# Tick borne encephalitis

- ssRNA flavivirus
- Transmitted by
  - Ixodes ticks
    - Risk if traversing forest/ grasslands
  - Unpasteurised dairy products
- Clinical
  - 2/3 Asymptomatic
  - 1/3 Disease
    - 'flu-like illness which may progress to
    - Aseptic meningitis/ encephalitis/ myelitis
      - European <2% fatality & 30% neurosequelae
      - Far Eastern 20-40% fatality & high neurosequelae
      - Siberian 2% fatality & high neurosequelae

# Distribution of Ixodes & TBE



[www.columbia-lyme.org/.../tbd\\_encephalitis.html](http://www.columbia-lyme.org/.../tbd_encephalitis.html)

# Avoiding TBE

- DEET/ Permethrin
- Wear trousers tucked into socks
- Stay on the path in natural areas
- Check self for ticks and remove ASAP
  - Use tweezers
  - Don't use oils/ heat/ nail varnish
- Avoid unpasteurised dairy products
- Vaccine is available
  - Expensive and difficult to obtain in NZ