Fight the Bite: Protect Yourself Against Mosquito and Tick Bites

Massachusetts Department of Public Health
Epidemiology Program
4/28/2009
Personal Protection

- Options for Repellents
- Protective Clothing
- Household tasks that can reduce mosquito populations
- Differences in protection options for mosquito bites and tick bites
Mosquito Repellents

- Repellents should be used anytime you are outdoors and could be exposed to mosquitoes

- CDC recommended repellents
  - DEET
  - Permethrin
  - Picaridin
  - IR3535
  - Oil of Lemon Eucalyptus
DEET

- N, N-diethyl-m-toluamide
- Available in many forms and concentrations
- Safety considerations for infants and children
**DEET**

- Effectiveness of DEET varies with concentration levels and time.
- Factors such as temperature, perspiration and water exposure also affect efficacy.

<table>
<thead>
<tr>
<th>DEET%:</th>
<th>4.75%</th>
<th>6.65%</th>
<th>20%</th>
<th>23.8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection time:</td>
<td>1 ½</td>
<td>2</td>
<td>4</td>
<td>5</td>
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In hours
Permethrin

- Pyrethroid class of pesticides
- Classified as both a repellent and an insecticide
- Intended use is on clothes, shoes, bed nets, camping equipment, etc.
- NOT safe for use on skin
Picaridin

- KBR 3023
- Introduced to the US market in 2005
- Colorless and nearly odorless
- Product contains 5-20% of active ingredient
- Safe for use on skin
IR3535 and Oil of Lemon Eucalyptus

The “Biopesticides”
- Pesticides made from natural materials

Oil of Lemon Eucalyptus – derived from leaves and twigs of *Eucalyptus citteriodora*

IR3535 – related to β-alanine

Only 2 biopesticides shown to be comparable to DEET and Picaridin in effectiveness
Always Use Repellents Safely!

- Follow the instructions on the product label
- Don’t use repellents under clothing
- Don’t use repellents on cuts or irritated skin
- Avoid using repellents near mouth, eyes, ears
- Don’t let children handle the product
- Wash skin and clothes after returning inside
- Use just enough repellent to lightly cover exposed skin and clothes
What else can I do?

- Wear long pants, long-sleeved shirts and socks when outdoors
- Use mosquito netting on playpens and strollers
- Avoid outdoor activities between dusk and dawn
Protect your home

- Keep window and door screens in good repair
- Eliminate standing water
- Dispose of or turn over cans, pots, containers, trash cans, wading pools, wheelbarrows, etc.; remove old tires
- Clear gutters
- Drain recycling containers
- Larvicide standing water
The Tick
Tick Repellents

- **DEET**
  - can be used on skin or clothes
  - Comes in many forms and concentrations
  - Should be used according to package directions

- **Permethrin**
  - ONLY for use on clothes, not on skin
  - Pretreat clothes, bed nets, shoes and camping gear
  - Should be used according to package directions
What else can I do?

- Check yourself for ticks everyday
- Wear long sleeves, long pants and socks when outdoors – particularly in spring, summer and fall
- Stay on trails and cleared areas when hiking or camping
- Protect and check pets for ticks
Around the house

- Keep grass cut short
- Remove leaf litter and brush from around the home
- Prune low lying bushes to let in more sunlight
- Keep woodpiles and birdfeeders off the ground and away from the home
- Use a three-foot wide woodchip mulch or gravel barrier between the lawn and the woods
- Consider planting plants that do not attract deer
For more info...

- Massachusetts Department of Public Health - Bureau of Infectious Disease Prevention, Response and Services or Bureau of Environmental Health - [www.mass.gov/dph](http://www.mass.gov/dph)
- Massachusetts Department of Agricultural Resources - [www.mass.gov/dar](http://www.mass.gov/dar)
- US Centers for Disease Control - [www.cdc.gov](http://www.cdc.gov)
- US Environmental Protection Agency - [www.epa.gov](http://www.epa.gov)
- National Pesticide Information Center - [www.npic.orst.edu](http://www.npic.orst.edu)
Any questions?

Wear Bug Spray... Keep Bugs Away!

This poster was created by a student at Minuteman Regional High School, Graphic Communications Department, Massachusetts Department of Public Health 2006.