

# Is *anyone* using repellent? ...how hard can it be?

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# Outline

- Well, yes, *some* folks are using repellent.
  - National perspective
  - Who's doing what? Let's look at a few subpopulations
- How hard is it? It depends.
  - Lessons from Colorado
  - Why people are & aren't using repellent (and taking other steps)

# When it's warm in your area, do you...

- Nationwide: *those who report they always/usually...*
  - 43.9% look for household standing water
  - 37.6% apply {any} insect repellent
  - 28.5% avoid the outdoors due to mosquitoes
  - 23.9% wear long pants/sleeves

*74.5% doing at least one of the above.*

\* Healthstyles national survey, data licensed from Porter-Novelli, conducted July-Aug 2003



# If it's repellent, is it DEET?

- 40.3% of respondents have repellents containing DEET in the household (another 26.8% not sure)
- It's not DEET for everyone:
  - Only 59.3% of repellent “users” confirmed having DEET in the household
- Other respondents do have DEET, but they don't use it much
  - 44.6% of those have DEET in the household said that they did NOT always/usually use repellent

# Who's doing what?

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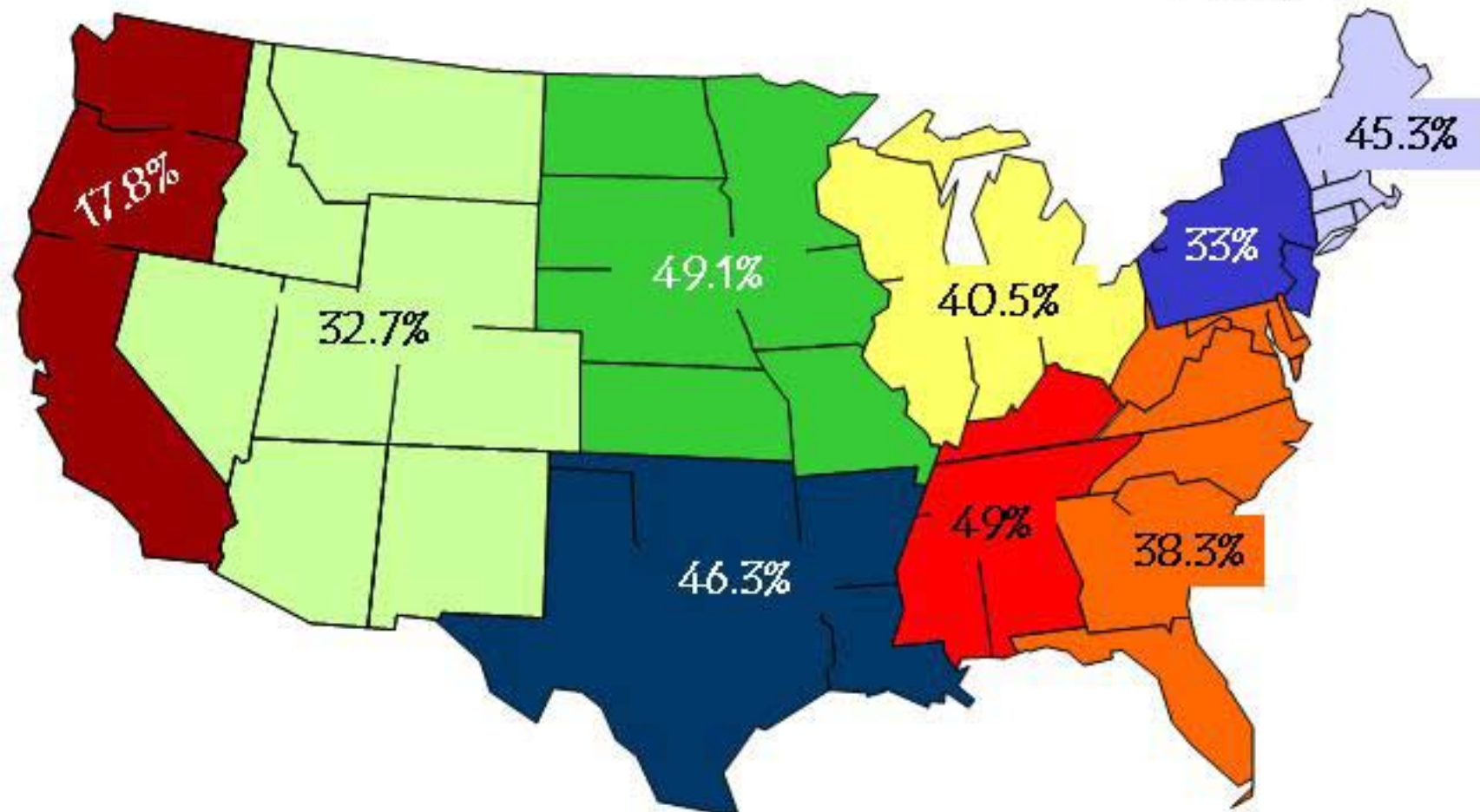


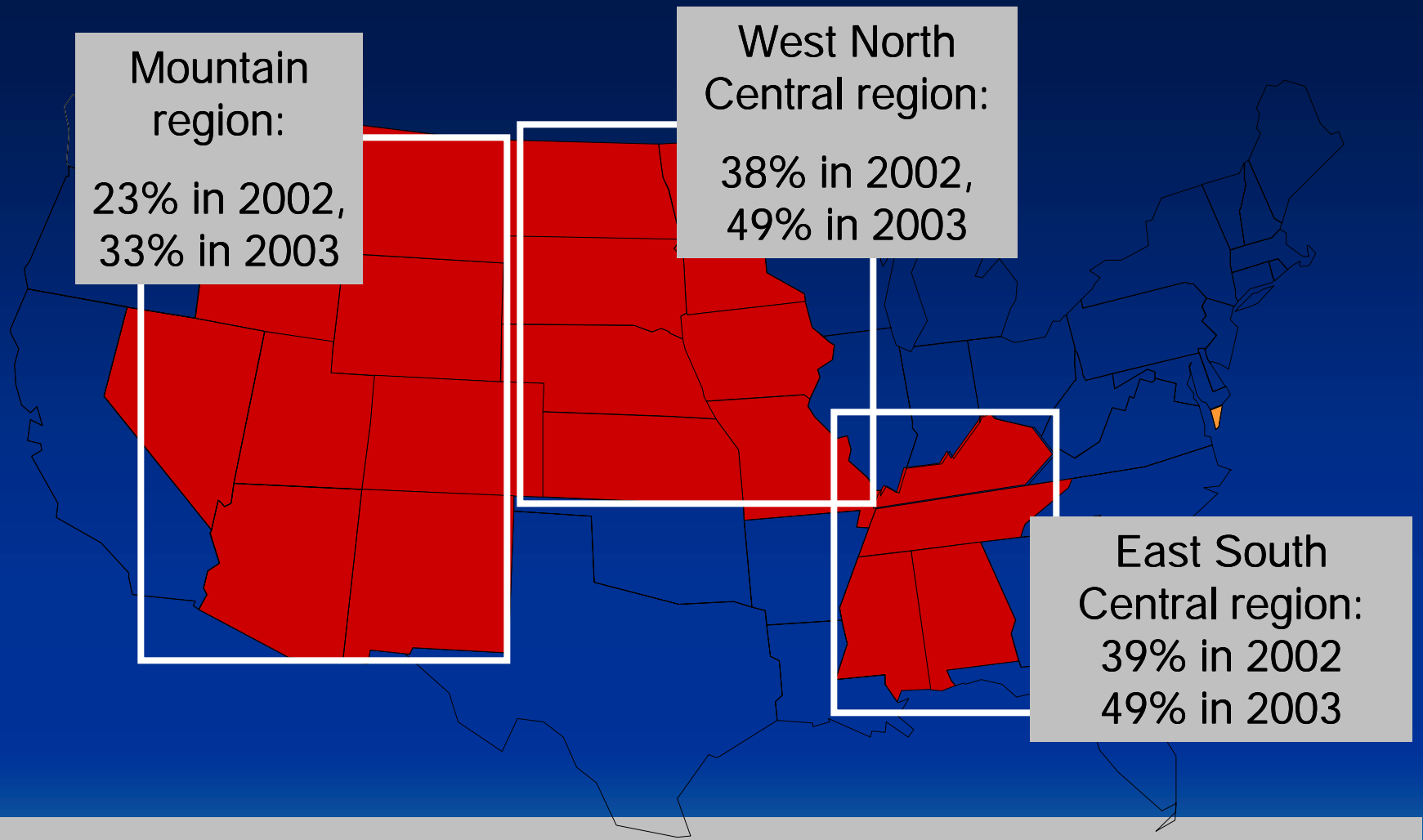
# Regional Differences: Repellent Use



# Always/Usually Use Repellent

Healthstyles-Porter Novelli  
Jul-Aug 2004  
n=4035 p<.000



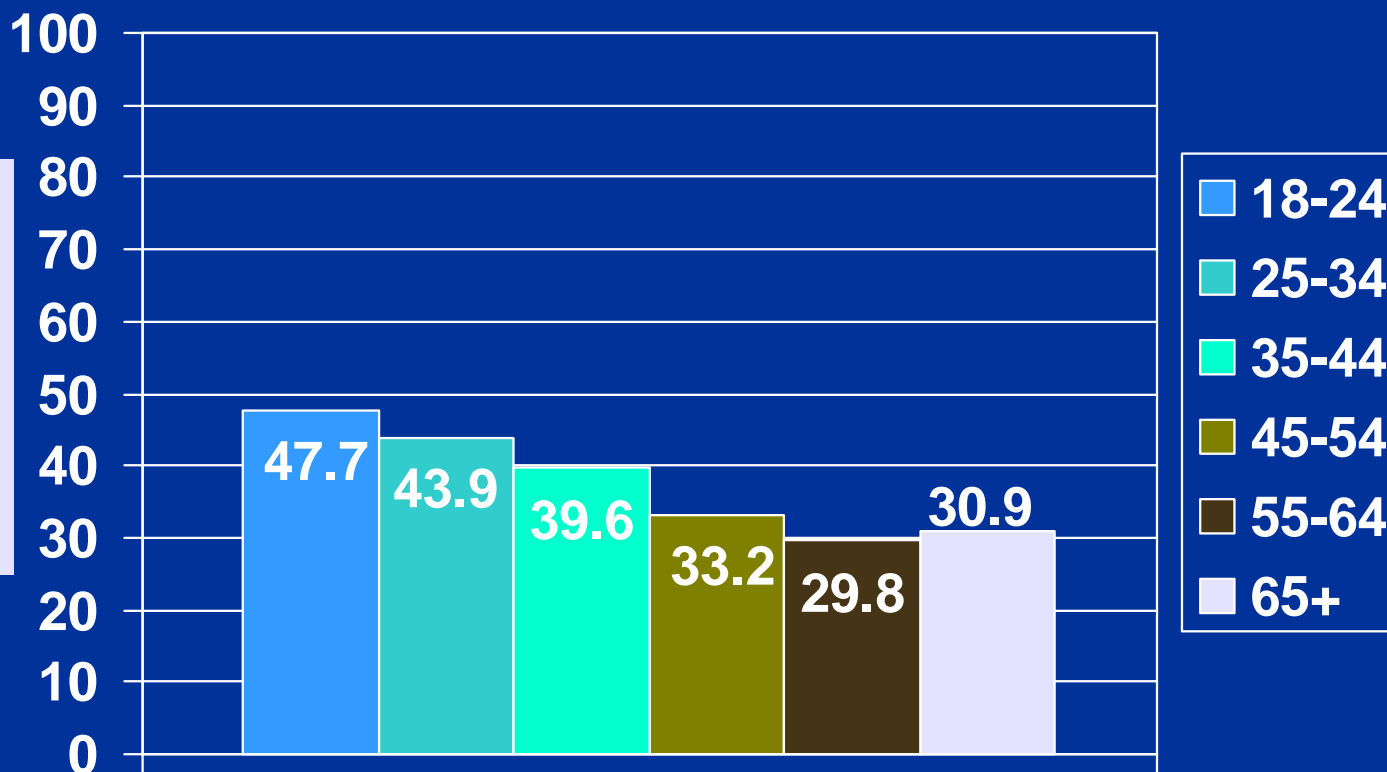


**Red = more than 10% increase in  
“Always/Usually Use Repellent”  
from 2002-2003, by region**



# Age & Repellent Use

**Bad News:**  
Repellent use  
(largely)  
decreases  
with age

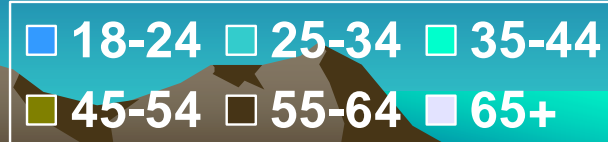
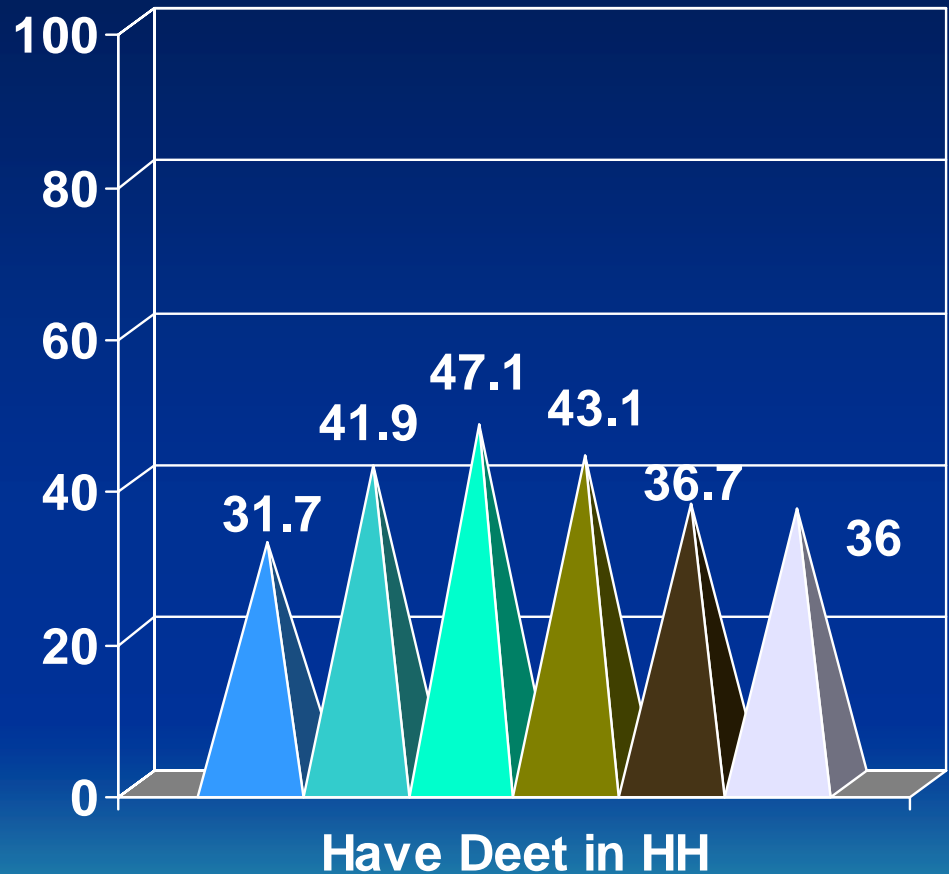


Use Repellent

$p < .000$ ;  $n = 4034$

# Age and DEET in household

- Highest age categories may be associated with having children at home

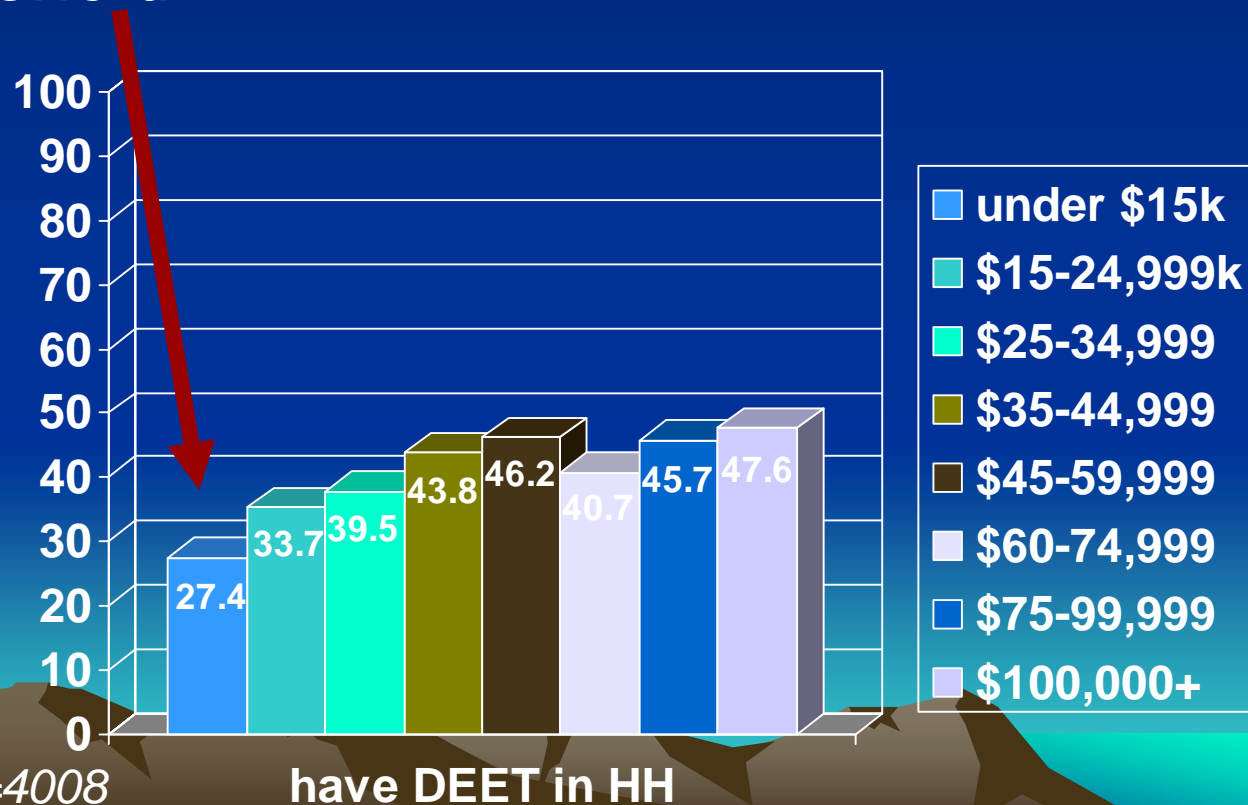


# Race/ethnicity

- Significant differences in having DEET in HH by race/ethnicity ( $p < .000$ )
  - “White” respondents most likely to have DEET (44.3%), other respondents less so (<33%)
- Use of repellent also significantly different ( $p < .000$ )
  - 45% of African-American respondents reported repellent use, whites and Hispanics, 37 & 38% respectively, with Asian-Pacific Islanders and “others” <30%

# Household income

- Poorer people in this sample were less likely to report having DEET-based repellent in the household.



$p < .000$ ,  $n = 4008$

have DEET in HH



# Education

- Education level directly related to having DEET in HH ( $p < .000$ )
  - Non HS graduates <30%, college graduates approaching 50% have DEET
  - Relationship to income bears further attention

# So, why?: Personal prevention and the Colorado outbreak

- Qualitative research to examine KAP and behavioral issues in higher and lower transmission areas
  - Larimer (high) and El Paso (low) counties
  - Focus group discussions (~12 total)
  - Topics:
    - Risk perception
    - Attitudes twd mosquitoes, repellents, spraying
    - Information sources and shortcomings
    - Views on responsibility for prevention

# It's not *all* about knowledge or about the bug spray

- The decision to obtain/use repellent is only partly a function of knowledge about WNV, knowledge about prevention, or attitudes toward products.
  - Assessments of risk
    - Temporal, geographical, control/fear/outrage
  - Perceived impact of prevention efforts
    - Would any of these steps make a difference?
  - Individual cost-benefit analysis
    - What is it costing me to take these preventive measures? (not just \$)

# Risk Perception: popular geography

- “No mosquitoes here”
  - Esp. El Paso Co. but also northern Colorado
  - Public lacks history of dealing with mosquitoes as a nuisance or makes qualitative comparisons to Midwest/elsewhere
    - *“I just don’t see where all these mosquitoes can be coming from...”*
- Home as “Safe Zone”
  - Failure to use repellent when “just in the backyard,” disinclination to regard home as dangerous
    - *“Most of us [retirees] who are living here are so happy to be in this particular environment that we think we’ve got it made and... we’re kind of invulnerable to any sort of thing.”*



# Risk Perception: popular geography

- “Hyper-localization” of risk
  - Desire to directly quantify where and when the risk exists
  - *“We hear about the deaths... I wish they would go into a bit more history [of where they were bit.]”*

# Risk Perception: age

- Some older participants (> 60 y.o.) pointed out their experience with other illnesses
  - *Lived through polio*
  - *I had malaria and I figured I must be immune*
- Risk for younger people:
  - *“One of my younger neighbors, he thought that he ought to go ahead and get it so he would build up an immunity...”*

# Risk Perception: axes of fear and control

- Concern fueled by sense of powerlessness
  - felt that personal options were limited
- Risk seems ‘unquantifiable’ to general public
  - hard to make decisions about prevention--what to do, what to give up
- Difficulty conceptualizing that something as “insignificant” as a single mosquito bite can be fatal or life-changing

# Risk Perception: axis of outrage

- Adulterating in Larimer county became major and divisive distraction from other prevention messages

# Risk & Information: Dual Role of Media

- People get bulk of information from media
  - Passive means of education, very subject to the vagaries of how issues are covered – to what makes the “front page”
- Despite the reliance on media, respondents also stated that media “hypes everything”
  - *“I think there was confusion over how much is this really a problem and how much is media hype?”*
  - Public’s inherent distrust (or at least ambivalence) regarding the media affected level of concern

# Repellent: DEET and others

- Most participants reported infrequent or no use of DEET-based repellents
- Many cited their own sensory experience using repellent
  - smell, feel (“sticky”)
  - skin reactions, “sensitive skin,” *I just can’t use that stuff*
- Strong, though vague, beliefs and feelings about safety of DEET
  - Attribute brain damage, nerve damage, danger to kids
  - Often describe as “something I heard somewhere... read somewhere”

# More on repellents

- Permethrin repellents never mentioned
- Use of any repellent on clothing rarely discussed
- Very little awareness of details about repellent
  - DEET % strength unclear
  - Little about “hierarchy” of alternatives
- Alternative repellents
  - citronella oil but not as interesting as the South
  - SSS & the Avon ladies
  - *“They wouldn’t have come up with the other types if there weren’t something wrong with DEET.”*

# Cues to Action

- Seeing repellent sold in retail locations triggered purchase
  - “[they] had [repellent] right when you walk in the door... we bought some right then, and I don’t know if I would have right then [otherwise]... I thought that was wise and caring.” (And not a bad marketing tactic)
- Hearing about & knowing people around them who were ill



# Conclusions I

- A minority of the US population is using repellent but most are doing *something*.
  - But important gaps related to population (age, SES) and possible geographic risk factors
  - The “something” might provide limited protection.

# Conclusions II

- Many reasons people aren't "doing what we tell them to," often related to perceived risk and their trust in the options for personal prevention presented to them.

# Future steps

- “Socially market” repellents with greater savvy
  - DEET and more effective alternatives
  - Distribution points (where people already go)
  - Encourage industry to look at some of the things people really don't like about DEET
  - Address safety straight on
- Use the fact that nearly half the population already report looking for breeding sites
  - Encourage, and evaluate

# Future Steps

- Message + receiver  $\neq$  behavior change
  - A message w/o context might be insufficient
  - There are reasons that people don't do things that they are being harangued to do, find out what those reasons are... and address them.
- A lesson from the Avon ladies
  - Personal haranguing is really different than getting it on TV, a website or a flyer. Engage communities.

# acknowledgements

the many staff at CDC, local health departments, agencies, hospitals and community groups & individuals in Colorado who have assisted in collecting & analyzing the data

