

DEET in our Waterways



The Minnesota Department of Health has placed DEET on the top spot on its list of "chemicals of emerging concern" and will conduct numerous tests this year. The main objective of the research will be to calculate a "safe" level of exposure. Although DEET has been okayed for clothes and skin (in moderation) it has never been meant for consumption. But with its increasing popularity and abundant usage it is showing up in ever greater quantities in our rivers, streams and lakes and it is only a matter of time before it shows up in our drinking water as well. The highest percentages of DEET have been found downstream of wastewater treatment plants. We apply, we shower and the DEET goes straight into our waters, for the wastewater treatment plants not only aren't equipped to deal with these chemicals, but there are also no standards for how much of them is acceptable in our water. As well as what is washed off the skin, research has shown an absorption rate of up to 56% dependant on the formulation.¹ That absorbed DEET is processed by the liver and then excreted primarily in the urine. And be warned, in government tests, sunscreen products containing DEET were absorbed faster, and at a rate 3.4 times higher, than the single 20.0% DEET solution.²

Prozac, antibiotics, personal care products, steroids, disinfectants, fire retardants, ibuprofen, anti-depressants, birth control pills and DEET all make it past the wastewater treatment plant and back into our closed ecological system. Studies have yet to be done on the long term, low dosage exposure to any of these chemicals, no less the synergistic affects of all together. 'We' might steer clear of the majority of these products but we are exposing fish to the sum total. And as all make their way into our drinking water we will all soon be guinea pigs as to their affects.

So far DEET has not been tested as to its Developmental or Reproductive, Endocrine Disruption or Water Contamination affects. ³

What the government does list on their site though is that "DEET is a plasticizer and can damage certain rubber, plastic, vinyl, or elastic materials such as contact lenses, eyeglass frames and lenses, watch crystals, combs, painted and varnished surfaces, and certain synthetic or treated fabrics." ⁴

That its Chemical Class is: Unclassified.

And that Scientists have not definitively determined the exact mode of action of DEET in target organisms.⁵ Another words, they do not know how it works.

DEET (N,N-Diethyl-meta-toluamide) was developed by the United States Army during World War II.

Some of the Symptoms of DEET Exposure:

CNS disturbances. Toxicity is primarily neurologic (encephalopathy, seizures, movement disorders, coma) and may occur via oral or dermal exposure, most commonly in children. Hypotension has been reported after large ingestions. Confusion, ataxia, hypertonicity, and clonic jerking progressing to coma and seizures may occur after acute oral or chronic dermal exposure. Initial signs may be: disorientation, staggering gait, slurred speech, stiffening into sitting position, crying out, extension of extremities, flexing the fingers and dorsiflexing the toes and tremors.⁵

Children and pregnant woman should abstain.

Interactions:

Two lethal cases of DEET poisoning were associated with ingestion of alcohol and of CNS depressants. DEET-induced CNS depression may be potentiated by alcohol or psychotropic drugs (Tenenbein, 1987).⁵

References:

- 1) International Programme on Chemical Safety www.inchem.org/documents
Between 9% and 56% of dermally applied DEET is absorbed through the skin (Robins & Cherniak, 1986). DEET is found in the placenta and fetus and in rats 3 months after birth.
National Pesticide Information Center. <http://pi.ace.orst.edu>
Research on humans has shown males absorb between 5.6% and 8.3% of the applied dose, dependant on the formulation. DEET crossed the human placental barrier and was detected in 8% of cord blood samples.
- 2) National Pesticide Information Center. <http://pi.ace.orst.edu>
- 3) PAN Pesticide Data Base. www.pesticideinfo.org
- 4) National Pesticide Information Center. <http://pi.ace.orst.edu>
- 5) International Programme on Chemical Safety www.inchem.org/documents/pims/chemical/deet.htm

Story Reference: Mineapolis/St Paul Star Tribune www.startribune.com

- See more at: <http://www.inspirationgreen.com/deet-in-our-waterways.html#sthash.1bYLNTgQ.dpuf>