

A Brief Toxicological Analysis of the DEET

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One item that one should always carry while in the upper reaches of the Chilko-Chilcotin River system is insect repellent. Marshy areas with large sections of standing water just below Chilko Lake are conducive to insects of the culicidae family, better known as the dreaded mosquito.

The active ingredient in a majority of insect repellents, N,N-diethyl-meta-toluamide, commonly called DEET, typically ranges in concentration from 20-100%. While there are alternative insect repellent active ingredients, DEET remains far superior in length of effectiveness and ability to deter biting insects.

I began to question the adverse effects of DEET after tasting a terribly bitter taste when eating, which I eventually attributed to the insect repellent. I had previously heard that DEET could be corrosive on certain plastics, which made me wonder what would happen to my intestinal tract after accidentally ingesting a small amount.

According to the European Union, DEET is classified as toxic through inhalation, dermal exposure and harmful if ingested. DEET has also been shown to inhibit acetylcholinesterase, a vital central nervous system enzyme in humans and insects. Additionally, according to a study by Cornell University on Everglades National Park employees, high DEET exposure has been shown to increase rates of insomnia, mood disturbances and poorer cognitive function than unexposed individuals. High DEET exposure was more often correlated with rashes, skin irritation, mucous membrane irritation and burning lips. In addition, 8 deaths have been attributed to DEET exposure over the past 50 years. However 3 deaths were suicides.

So why, with these adverse effects, is DEET still used, and why does the consumer continue to buy products containing high levels of DEET? While there have been recorded incidences of severe health problems related to DEET, serious symptoms are extremely rare. Of the estimated 110 million Americans that use DEET annually, a miniscule amount suffer any minor adverse effects, let alone a serious one that is associated with DEET poisoning. In addition, certain mosquitoes are known to carry deadly diseases such as Yellow Fever, Dengue Fever, West Nile Virus, and Malaria. DEET's ability to protect against these deadly diseases and the constant pestering of the female mosquito far outweighs its potential to cause adverse effects.