Is DEET safe for children?

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EVIDENCE-BASED ANSWER

Reported evidence suggests that DEET use is safe for children older than 2 months, with only very rare incidence of major adverse effects (strength of recommendation [SOR]: C). Typically, a topical concentration between 10% and 30% should be used (SOR: C). Increasing DEET concentration does not improve protection, but does increase the duration of action (SOR: A).

CLINICAL COMMENTARY

Counsel parents to take 3 steps to prevent bites—avoid, cover up, and repel

The emergence of West Nile virus has heightened awareness of mosquitoes, and I often field questions about how to protect children from bites. I counsel parents to take 3 steps to prevent bites—avoid, cover up, and repel. Mosquitoes are active at dawn and dusk, so staying indoors during these times is protective. Covering up with long sleeves, pants, and socks protects from most bites. Lastly, DEET repellent protects exposed areas from mosquitoes. Lotions make it easier to apply DEET to children. Commonly, parents express fear of DEET due to media reports. This review will help me ease their fears.

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Evidence summary

The increasing prevalence of mosquito-borne diseases, including West Nile virus, has raised concerns about safe and effective forms of prevention. For decades, parents have used the insect repellent DEET (N,N-diethyl-metatoluamide), but questions remain regarding adverse effects, including seizures, particularly when used in children.

Two large case series suggested that the risk of DEET is low. The first collected poison control center reports during the 1980s. The report concluded that DEET exposure rarely led to adverse effects and that the route of administration (ie, ingestion) was more closely linked to toxicity than age or gender.1 There were 5 major adverse reactions reported from 9086 exposures to DEET (0.05%); these included hypotension, hypotonic reaction, and syncope, and 1 death (a suicide ingestion).

The second series, also collected from poison control centers, included roughly 21,000 reports of DEET exposures during the 1990s. The authors concluded that the risk of toxicity was low and that there was no clear dose-dependent relationship between exposure and extent of severity of neurologic manifestations.2 This report found a rate of major adverse reactions (0.1%) from DEET that was similar to the first case series. The major reactions reported included hypotension, seizures, respiratory distress, and 2 deaths (0.01%). When limiting the data to infants and children only, there were 10 major events among 17,252 reported exposures (0.06%), and no deaths. Although infants and children accounted for 83.1% of all reported exposures, the majority of the serious outcomes (including the deaths) occurred in adults. About half of all those exposed reportedly had no ill effects, the
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DEET at 10%–30% concentration is safe for children older than 2 months; increased concentration prolongs action but does not improve protection

**REFERENCES**


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**Recommendations from others**

The American Academy of Pediatrics recommends avoiding DEET in children under 2 months of age. For all other children, it advises using DEET with a concentration between 10% and 30%.

**REFERENCES**

1. Veltri JC, Osimitz TG, Bradford DC, Page BC. Retrospective analysis of calls to poison control cen-