

JOHNS HOPKINS



# Student Health & Wellness Center

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## Repelling Mosquito Bites

Are you using the right insect repellent?



A recent study found that insect repellents containing the chemical DEET provide the best protection against mosquito bites.

Other products or lotions which do not contain DEET (also known as N, N-diethyl-3-methylbenzamide) were not found to be as effective.

The study, published in the *New England Journal of Medicine* (July 4, 2002), compared sixteen commonly used insect repellents. The investigators evaluated repellents which contained citronella, DEET, and IR3535. They also evaluated a variety of Avon® skin products as well as three different wristbands. They even evaluated a soybean-based product.

Volunteers inserted their repellent-treated arms into a cage with 10 unfed *Aedes aegypti* mosquitoes. The time it took for the first mosquito to bite was then measured.

### What did the investigators find?

Of the all the repellents they tested, those with DEET provided the longest lasting protection.

- 23.8% DEET (OFF! Deep Woods®) provided an average of 5 hours of complete protection after a single application.
- 20% DEET (Sawyer Controlled Release®) provided an average of 3-4 hours of protection.
- 6.65% DEET (OFF! Skintastic®) provided an average of 112 minutes of protection.
- 4.75% DEET (OFF! Skintastic for Kids®) was found to provide an average of 88 minutes of protection.

A soybean-based repellent (HOMS Bite Blocker for Kids®) was found to be the next most effective repellent after DEET products. It was found to work an average of 1.5 hours after application.

Avon Skin-So-Soft Bug Guard Plus® protected against mosquito bites an average of 22.9 minutes after application.

The wristbands were found to be ineffective.

What does this mean?

The best protection against mosquito bites is to avoid mosquito-infested areas. Wearing long sleeves and long pants is advisable if you need to go outdoors.



The next best protection is to use an insect repellent. You can choose any repellent, but you must keep in mind that not all insect repellents are created equal. If you choose a repellent which does not contain DEET, you may have to reapply the product frequently.

**Reference:**

Fradin M, Day K. Comparative efficacy of insect repellents against mosquito bites. [New England Journal of Medicine](#) 2002;347:13-18.

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