Mosquito Repellents That Best Protect Against Zika

Consumer Reports shares its exclusive Ratings of the sprays that can help keep you safe

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The World Health Organization has declared the rapid spread of the Zika virus —which has been linked to serious birth defects and is transmitted mainly by mosquitoes—an international public health emergency. In response to this growing threat, Consumer Reports is releasing free to the public its exclusive test results and Ratings of mosquito repellents—including those that will protect you best against Aedes mosquitoes, the type that carry Zika.

The Zika virus can make anyone sick for up to a week with fever, rash, joint pain, red eyes, and other symptoms. But it's especially dangerous for women who are pregnant or considering pregnancy because it increases the risk of babies born with microcephaly, a condition marked by an abnormally small head and incomplete brain development.

There is currently no vaccine to prevent the disease or drug to treat it, making it essential that people avoid mosquito bites, according to the Centers for Disease Control and Prevention.

The CDC emphasizes that avoiding mosquito bites requires multiple strategies, such as wearing long-sleeved pants and shirts when outdoors. But it says that mosquito repellents are essential, too.

"Using an insect repellent is one of the best ways you can protect yourself from Zika and other diseases transmitted by mosquitoes," says Harry Savage, chief of ecology and entomology activity at the CDC's Division of Vector-Borne

Diseases.

And Consumer Reports' tests showed that some repellents worked much better than others at protecting against the type of mosquitoes that transmit Zika.

The CDC has urged pregnant women against travel to countries where Zika has been reported, mostly in Latin America and the Caribbean, including Puerto Rico and the U.S. Virgin Islands.

While no cases have yet been traced to mosquito bites received on the U.S. mainland, experts predict some spread of the disease in the U.S. as the weather warms up, particularly in Florida, Texas, and other Southern states where the Aedes mosquitoes that carry the disease are most prevalent.

The Most Effective Insect Repellents

To find the most effective mosquito repellents, we tested products containing a variety of ingredients, including deet, picaridin, oil of lemon eucalyptus, chemicals called IR3535 and 2-undecanone, as well as a variety of plant oils, such as cedar, citronella, geraniol, lemongrass, and rosemary. (See details on our testing methods here.)

The most effective products against Aedes mosquitoes were Sawyer Picaridin and Natrapel 8 Hour, which each contain 20 percent picaridin, and Off! Deepwoods VIII, which contains 25 percent deet. They kept mosquitoes from biting for about 8 hours. (The Sawyer product was the only one that also kept Culex mosquitoes, which can spread West Nile disease, and deer ticks, which can spread Lyme disease, away for at least 8 hours, making it our top insect repellent overall.)

Ben's 30% DEET Tick & Insect Wilderness Formula kept aedes mosquitoes away for 7.5 hours and Repel Lemon Eucalyptus, containing 30 percent lemon eucalyptus, stopped them for 7 hours.

The IR3535 products didn't make our list of recommended sprays. Neither did repellents with 2-Undecananone or those that contained 5 percent picaridin or 7 percent deet.

We advise skipping most products made with natural plant oils, such as California Baby Natural Bug Blend (a blend of citronella, lemongrass oil, cedar oil, and other ingredients) and EcoSmart Organic, (which includes geraniol, rosemary oil, cinnamon oil, and lemongrass oil). They did not last for more than 1 hour against Aedes mosquitoes, and some failed almost immediately.

In addition, those products are not registered by the Environmental Protection Agency, which regulates skin-applied repellents and evaluates them for safety and effectiveness. Most plant-oil products are exempt from scrutiny by the EPA because the agency considers them to be a minimum risk to human health.

Instead, the CDC recommends using EPA-registered insect repellents. To see if a mosquito repellent is registered by the EPA, look for its registration number ("EPA Reg.") on the back of the label.

The Best Way to Use Mosquito Repellent

Insect repellents that use deet come in varying concentrations, ranging from 4 percent to 100 percent. Our previous tests show that concentrations of 30 percent provide the same protection against mosquitoes as higher percentages for up to 8 hours. But higher concentrations of deet have been linked to rashes, disorientation, and seizures. That's why Consumer Reports says you should avoid mosquito repellents with more than 30 percent deet and not use it at all on infants younger than 2 months.

Women who are pregnant or breast feeding can safely use deet, picaridin, lemon eucalyptus, and IR3535, according to the EPA, if they are applied properly. Here are tips from the EPA on how to use insect repellent:

- Apply repellents only to exposed skin or clothing—never put it on under clothing. Use just enough to cover and only for as long as needed; heavy doses don't work better.
- Don't apply mosquito repellents over cuts, wounds, or irritated skin or immediately after shaving.
- When applying to your face, spray first on your hands, then rub in, avoiding your eyes and mouth, and using sparingly around ears.

- Don't let young children apply. Instead, put it on your own hands, then rub it on. Limit use on children's hands, because they often put their hands in their eyes and mouths.
- Don't use near food, and wash hands after application and before eating or drinking.
- At the end of the day, wash treated skin with soap and water, and wash treated clothing in a separate wash before wearing again.

Check our mosquito repellent Ratings.

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