

Spraying just 12% of the room kills 85% of mosquitoes, study shows

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A study in a semi-natural setting finds that targeting just the very bottom of a room's walls with insecticide will kill most of the mosquitoes, suggesting a cheaper and easier way to treat houses during disease

outbreaks. The paper is published in the journal *PNAS Nexus*.

The mosquito *Aedes aegypti* is a vector for serious diseases, including dengue, chikungunya and Zika. In Asia and Latin America, one approach taken to control mosquitoes that rest inside homes is indoor residual spraying, in which interior walls are coated with a persistent insecticide. However, the large surface area that must be coated makes the approach expensive to implement.

Luca Facchinelli and colleagues sought to identify a more precise "kill zone" to make indoor residual spraying cheaper and easier for individual householders to undertake on their own.

The authors ran a series of experiments using sticky strips mounted at different wall heights to explore where mosquitoes choose to rest. Most mosquitoes chose to rest near the floor, with most of the insects choosing to perch on the first 20 centimeters of the wall, corresponding to 12.3% of the total wall surface.

The hotter the room, the further down the mosquitoes tended to rest, as the lower part of the room is typically cooler. Spraying just in this bottommost zone could kill over 85% of the [mosquitoes](#) in the house, according to the author's estimates—especially if this zone is colored black, as *Aedes aegypti* are known to prefer to perch on dark surfaces.

Individual householders could easily apply insecticidal paint or an [insecticide](#) sprayed with a handheld aerosol can to this easily accessible zone, according to the authors.

More information: Luca Facchinelli et al, Mapping *Aedes aegypti* indoor resting behavior reveals a preference vulnerable to householder-led vector control, *PNAS Nexus* (2023). [DOI: 10.1093/pnasnexus/pgad226](https://doi.org/10.1093/pnasnexus/pgad226)

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