

Mosquito Reduction May Not Reduce Incidence Of Dengue

16 Jul 2008

[Click to Print](#)

A new study published in the open-access journal *PLoS Neglected Tropical Diseases* finds a paradoxical relationship between dengue hemorrhagic fever and the mosquitoes that carry the virus. The surprising result, wrote the researchers from Thailand, Japan, and the UK, was that as the density of the *Aedes* mosquitoes decreased, there was an increase in the incidence of dengue hemorrhagic fever (DHF). This negative correlation between mosquito density and DHF incidence suggests that the recent drive to reduce the number of these viral mosquitoes actually may be leading to an increase in the occurrence of a potentially fatal disease.

As millions of people suffer from the dengue virus every year, the World Health Organization and health authorities in the tropical world have placed emphasis on reducing the number of *Aedes* mosquitoes. Their efforts have proved relatively unsuccessful, however, as the number of DHF patients continues to rise. This observation led researchers to test the hypothesis that a higher incidence of a mosquito-borne illness occurs in a location with more mosquitoes.

The research method required community volunteers in Thailand to visit one million houses to gather data on the local densities of *Aedes* mosquitoes. This survey information was then linked to data on the number of people with DHF who lived in each of the 1,000 districts surveyed. They found a 40% higher incidence of DHF in areas of moderate mosquito density compared to areas of the highest mosquito density.

What is the reason for this counterintuitive finding? One possibility concerns the fact that DHF develops most frequently after the second time the patient has a dengue infection. "Furthermore, even substantial vector reduction... would not necessarily decrease the final incidence [of DHF]...but would result most likely in a greater number of DHF cases accumulated over the course of time. This calculation suggests that it is extremely difficult for vector control [of *Aedes* mosquitoes] alone to achieve the ultimate goal of control program - reduction of incidence," write the authors.

Relationship between Transmission Intensity and Incidence of Dengue Hemorrhagic Fever in Thailand

Thammapalo S, Nagao Y, Sakamoto W, Saengtharatip S, Tsujitani M, et al.

PLoS Neglected Tropical Disease (2008). 2(7): e263.

doi:10.1371/journal.pntd.0000263

[Click Here to View Article](#)

About *PLoS Neglected Tropical Diseases*

PLoS Neglected Tropical Diseases (<http://www.plosntds.org/>) is a peer-reviewed, open-access journal devoted to the pathology, epidemiology, prevention, treatment, and control of the neglected tropical diseases, as well as public policy relevant to this group of diseases. All works published in *PLoS Neglected Tropical Diseases* are open access, which means that everything is immediately and freely available subject only to the condition that the original authorship and source are properly attributed. The Public Library of Science uses the Creative Commons Attribution License, and copyright is retained by the authors.

About the Public Library of Science

The Public Library of Science (PLoS) is a non-profit organization of scientists and physicians committed to making the world's scientific and medical literature a freely available public resource. For more information, visit <http://www.plos.org>

Written by: Peter M Crosta

Copyright: Medical News Today

Not to be reproduced without permission of Medical News Today

Article URL: <http://www.medicalnewstoday.com/articles/114917.php>

Main News Category: Tropical Diseases

Also Appears In: Public Health, Infectious Diseases / Bacteria / Viruses,

Save time! Get the latest medical news headlines for your specialist area, in a weekly newsletter e-mail. See <http://www.medicalnewstoday.com/newsletters.php> for details.

Send your press releases to pressrelease@medicalnewstoday.com