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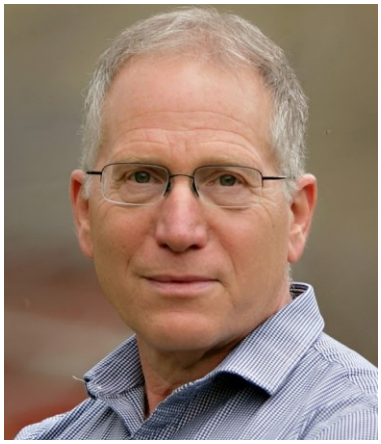
8 a.m. CST, 9 a.m. EST, 2 p.m. GMT, 10 p.m. China
Wednesday, Dec. 11, 2024



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https://www.caryinstitute.org/science/our-scientists/dr-richard-s-ostfeld

Richard S. Ostfeld is distinguished senior scientist at the Cary Institute of Ecosystem Studies in Millbrook, New York, and an adjunct professor at Rutgers University and the University of Connecticut. His training was at the University of California-Berkeley (doctoral degree) and University of California-Santa Cruz (bachelor degree), and Boston University (postdoctoral fellow). He has published >280 peer-reviewed articles, written one book (*Lyme Disease: The Ecology of a Complex System*, 2011, Oxford University Press), and co-edited five books as well as an annual series, *The Year in Ecology and Conservation Biology*. He serves on the editorial boards of *Ecology Letters*, *Lancet Planetary Health* and *Vector-borne and Zoonotic Diseases*, and is a contributor to the National Climate Assessment and the National Nature Assessment. He has given several USA Congressional Briefings on environmental change and emerging infectious diseases. Ostfeld is a member of the National Academy of Sciences (2024) and is a Fellow of the American Academy of Arts and Sciences (2019), the Ecological Society of America (2014) and the American Association for the Advancement of Science (2013). He was awarded the C. Hart Merriam Award from the American Society of Mammalogists (2011). Ostfeld's research focuses on ecological determinants of human risk of exposure to infectious diseases, emphasizing Lyme disease and other vector-borne infections. His research and perspectives have been covered by hundreds of media outlets, including *the New York Times*, *Washington Post*, NPR, ABC, NBC, CBS, CNN, *The Guardian*, *The New Yorker*, *Scientific American*, *Wired*, *Associated Press*, BBC, *Huffington Post*, *Discover* and many others.

Does tick control provide health protection? Insights from The Tick Project

Abstract: Prevalence of tick-borne zoonotic diseases is increasing globally, creating a global health crisis. To reduce the impact of tick-borne diseases on people, scientists seek to improve diagnosis, treatment and prevention. A hallmark of prevention is tick control. Several chemical and biological agents that are lethal to ticks (acaricides) have shown promise in reducing tick abundance. The expectation has been that human encounters with ticks and incidence of tick-borne disease would decline because of lower tick abundance. Felicia Keesing and I designed The Tick Project to test whether two acaricidal treatments, deployed at the level of residential neighborhoods within a Lyme-disease endemic area, would reduce cases of tick-borne disease and human encounters with ticks. We deployed tick control system (TCS) bait boxes, which apply chemical acaricide to small-mammal hosts, and Met52, a fungal acaricide sprayed on vegetation, separately and together, using a double-masked, placebo-controlled, randomized design. Twenty-four neighborhoods, each consisting of roughly 100 properties, in Dutchess County, New York, comprised the study sites. Although active TCS bait boxes were associated with a ~50% reduction in abundance of host-seeking blacklegged ticks, we observed no significant effects on either human encounters with ticks or cases of tick-borne disease. As a follow-up, we compared the results of published studies that did or did not use masking, placebo controls, and random assignment of treatment categories. We found that studies with masking, placebo controls, and randomization tended to show considerably smaller effect sizes and tended to show no epidemiological impact. These results suggest that the public health efficacy of tick control in residential areas has not been demonstrated. Funding levels sufficient to reduce serious constraints on experimental design will be important in determining whether tick control will prevent cases of tick-borne disease.

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