

Repellent-treated clothing nearly eliminates tick bites for outdoor workers

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(PhysOrg.com) -- A pilot study shows clothes treated with long-lasting insect repellent appear to offer outdoor workers significant protection against tick bites.

The study, conducted by researchers at the University of North Carolina at Chapel Hill Gillings School of Global Public Health, found 93 percent fewer tick attachments among a group of state water quality employees who wore Insect Shield Repellent Apparel, compared to workers in similar environments who used spray repellants or other tick bite prevention methods.

The findings were published this month in the journal *Vector-Borne and Zoonotic Diseases*.

Tick-borne diseases are a significant concern for millions of people who live and work in tick-infested habitats. If not treated early, these diseases can lead to severe illness or even death, said Steve Meshnick, M.D., Ph.D., UNC epidemiology professor and lead author of the study. Over the past two decades, the rate of diseases such as Lyme disease and Rocky Mountain spotted fever has increased.

“The technology holds the promise of a safe, simple and effective way to protect people from ticks and other [insects](#),” Meshnick said. “If further studies show similar results, the apparel could be used by people who are often outdoors for work or recreation or both. I can envision many uses around the world, including in developing countries to prevent malaria

spread by mosquitoes.”

Apparel treated with a special process for treating clothes with permethrin (a synthetic chemical approved for use as a contact repellent and insecticide) has been shown to repel mosquitoes, ants, flies, chiggers and midges (no-see-ums) for up to 70 launderings.

Epidemiology graduate student and study co-author Meagan Vaughn conducted the [pilot study](#) from March through September 2009 in outdoor workers from the North Carolina Division of Water Quality. Sixteen employees from the wetlands and permitting unit were selected because of the high number of work-related tick bites they reported in previous years. Nine employees wore Insect Shield treated clothing, while seven were in a control group who wore untreated clothing and continued their usual efforts to repel ticks, including use of spray repellents.

Results showed that for every 100 hours spent outdoors, the group wearing treated clothing had 99 percent fewer tick attachments during work hours and 93 percent fewer tick attachments overall than the control group.

Based on the pilot study results, researchers from UNC and N.C. State University were awarded a \$1.2 million, four-year grant from the U.S. Centers for Disease Control and Prevention’s National Institute for Occupational Safety and Health. Researchers have enrolled more than 120 outdoor workers in the state’s Divisions of Forestry, Parks and Recreation, and Wildlife Resources. Workers are randomly assigned to wear treated or untreated uniforms for two tick seasons. Neither participants nor investigators will know who is wearing which type of uniform. All participants will be monitored carefully for tick bites and tick-borne illnesses.

“Insect Shield is proud to partner with the UNC Gillings School of Global Public Health on these important research projects,” said Richard Lane, the company’s president. “We expect that the large study will corroborate the pilot study and further confirm that these treatments can prevent serious tick-borne diseases like [Lyme disease](#) and Rocky Mountain spotted fever.”

More information: Journal link: www.liebertonline.com/vbz

Provided by University of North Carolina at Chapel Hill

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