

Educational interventions decrease sunburns among heavy equipment operators

June 28 2018

Implementation of educational interventions among operating engineers (heavy equipment operators) in Michigan significantly increased the use of sunscreen and decreased the number of reported sunburns.

The study is published in *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research, by Sonia Duffy, Ph.D., RN, FAAN, cancer control researcher at The Ohio State University Comprehensive Cancer Center-Arthur G. James Cancer Hospital and Richard J. Solove Research Institute; professor and Mildred E. Newton Endowed Chair, College of Nursing at The Ohio State University in Columbus; and research scientist at the Department of Veterans Affairs in Ann Arbor, Michigan.

"The rates of melanoma have been increasing in recent decades in the United States, and outdoor workers are at an increased risk for developing this deadliest form of skin cancer," said Duffy. "We wanted to investigate how behavioral interventions can affect [sunscreen](#) use and sunburning among operating engineers as a way to prevent skin cancer."

While prior studies have indicated that interventions can result in beneficial sun-safety behaviors among outdoor workers, a systematic analysis revealed that this population had inadequate sun-protective behaviors. Furthermore, in a previous analysis, Duffy and colleagues found that approximately two-thirds of operating engineers reported rarely or never wearing sunscreen, even though 80 percent of this population reported spending four to five hours per day in the sun during

summer work hours. The use of sunscreen and protective clothing can mitigate exposure to UV radiation and decrease the risk of developing skin cancer.

In this trial, Duffy and colleagues recruited 357 operating engineers in the winter or spring of 2012-2013. Participants were provided baseline surveys and were randomized to four interventions: education only; education and text message reminders; education and mailed sunscreen; and education, text message reminders, and mailed sunscreen. Following the summer intervention, 82.1 percent of participants responded to post-intervention surveys.

The educational intervention comprised a 30-minute PowerPoint presentation delivered during pre-existing annual safety trainings. Key topics included current use of sun protection in this population as identified in a prior survey, the incidence and prevalence of skin cancer among [outdoor workers](#), skin [cancer](#) risk factors and types of [skin cancer](#), and methods to prevent sunburning.

"Your family and friends love you—put on sunscreen!" and "86% of [operating engineers] burn each summer—but not you, right?" Mailed sunscreen, which was received three times over the summer, included a large bottle of sun protection factor (SPF) 30 lotion and a small bottle that could be refilled and attached to key rings (as keys are important to operating engineers).

Overall, the percentage of participants who reported never wearing sunscreen was 38.1 percent at baseline and decreased to 21.8 percent at follow-up. All four interventions resulted in significantly increased use of sunscreen, with a marginally significant increase among participants who received the intervention comprised of education and text message reminders.

Overall, the percentage of participants who reported burning at least four times during the summer decreased from 18.6 percent at baseline to 5.8 percent at follow-up. The number of reported sunburns decreased significantly across all intervention groups. However, there was no significant difference in reported sunburns among the four interventions.

"Our most important finding was that a simple educational [intervention](#) significantly decreased the number of sunburns in operational engineers," noted Duffy. "Text messages and mailed sunscreen further improved outcomes, but education had the largest effect. I think there's a lack of knowledge about the risks of UV exposure in this population, and it was inspiring to see how a small effort resulted in a sizable health behavioral change."

Limitations of the study include a reliance on self-reported data. Additionally, nearly half of participants who received text messaging opted out of this service; the authors hypothesize that the high opt-out rate was due to the perceived cost of text messaging fees.

More information: *Cancer Epidemiology, Biomarkers & Prevention* (2018). [DOI: 10.1158/1055-9965.EPI-17-1023](https://doi.org/10.1158/1055-9965.EPI-17-1023)

Provided by American Association for Cancer Research

Citation: Educational interventions decrease sunburns among heavy equipment operators (2018, June 28) retrieved 4 May 2024 from <https://medicalxpress.com/news/2018-06-interventions-decrease-sunburns-heavy-equipment.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.