

Not all smoke alarms created equal

April 11 2008

If you thought all smoke alarms were equally effective, think again. According to a recent study by researchers from the Harborview Injury Prevention and Research Center (HIPRC) and the University of Washington in Seattle, photoelectric smoke alarms are much more likely to remain functioning after installation than are ionization alarms. Ionization alarms are the most common type found in U.S. households.

The study, which looked at more than 750 households in Washington State, found that nine months after a smoke alarm was installed, 20% of the ionized alarms did not function, compared to just 5% of the photoelectric alarms. Researchers checked the same alarms six months later and found similar results. The most common cause of a non-functioning alarm was the removal or disconnection of the battery.

Researchers found that ionization detectors were more prone to nuisance alarms, often caused by cooking. Nuisance alarms are the most cited reason by residents for removing or disconnecting an alarm battery. “Many fires in the house start in or around the kitchen, so we know that it is critical to have functioning smoke alarms on the first level, adjacent to the kitchen,” said Dr. Beth Mueller, the study principal investigator and epidemiologist at the HIPRC. “Clearly, photoelectric detectors performed much better in this part of the house.”

Alarms sold for home use in the U.S. are ionization, photoelectric, or combination designs. Photoelectric and ionization alarms operate differently. While both detect particles from combustion, photoelectric alarms use optical sensors and are more sensitive to slow, smoldering

conditions. Ionization alarms are responsive to flames by detecting particles from rapid combustion.

Source: Group Health Cooperative Center for Health Studies

Citation: Not all smoke alarms created equal (2008, April 11) retrieved 20 April 2024 from <https://phys.org/news/2008-04-alarms-equal.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.