

MONDAY, Aug. 16 (HealthDay News)

Firefighters may face a heightened risk for heart disease as a result of breathing in extremely fine particles that infiltrate the smallest air passages and lodge in their lungs, new research indicates. The findings suggest that better use of protective respiratory equipment may lower exposure and possibly reduce heart risks, the study authors noted. The ultra-fine particles in question are extremely small -- less than one-ten-thousandth of a millimeter in size, but they make up more than 70 percent of all particles emitted by fires, lead author C. Stuart Baxter and his colleagues at the University of Cincinnati said in a news release.

To gauge the potential risk to firefighters, the authors conducted a series of test fires and monitored levels of inhalable particles. High levels of ultra-fine particles were recorded throughout the firefighting process, they found. That means that firefighters face exposure to these harmful pollutants during their efforts to put out or contain a fire (known as the knockdown phase) and while trying to stop a fire from re-starting once put out (known as the overhaul phase). Nonetheless, Baxter and his associates said that the risk for inhaling fine particles may be highest during the later stage of firefighting, at which point firefighters typically are no longer wearing any protective respiratory gear. While calling for more research to explore the heart disease-fine particle link, the authors suggest that firefighters exercise caution by making more consistent use of protective gear throughout all phases of firefighting. They also backed existing protocols for screening of the firefighting community to identify those already compromised by particle exposure.

Heart disease is an important concern in the firefighting community, with almost half of all on-duty deaths stemming from heart-related events, according to the researchers. The findings are reported in the August issue of the Journal of Occupational and Environmental Medicine.