

Long-term ozone exposure increases ARDS risks in critically ill

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Critically ill patients who are exposed to higher daily levels of ozone are more likely to develop acute respiratory disease syndrome (ARDS), according to a new study published online ahead of print in the American Thoracic Society's *American Journal of Respiratory and Critical Care Medicine*. ARDS is a life-threatening inflammatory lung illness in which patients fail to obtain enough oxygen to the lungs. While previous research has shown a clear association between cigarette smoke and ARDS, the study "Long-Term Ozone Exposure Increases the Risk of Developing the Acute Respiratory Distress Syndrome" by Lorraine Ware, MD, of Vanderbilt University School of Medicine and colleagues is the first to demonstrate a risk related to ozone.

The researchers analyzed exposure using a heterogeneous group of 1558 [critically ill patients](#) from the Validating Acute Lung Injury Biomarkers for Diagnosis cohort. They found that as long-term [ozone exposure](#) increased, so did rates of ARDS, which developed in 563 patients. The association between ARDS risk and ozone exposure was greatest among trauma patients (n=552). In addition, "Ozone was significantly associated with ARDS only in current smokers and not in non-smokers," wrote the researchers.

"The generalizability of this most recent study is enhanced given the large and heterogeneous cohort we had at our disposal," Dr. Ware said. "However, we acknowledge that future studies need to replicate the findings in more diverse geographic samples so that we may more confidently recommend guidelines for reducing ozone exposure and ARDS risk among this vulnerable group of patients."

As the potentially harmful health consequences of ozone exposure continue to draw more concern, the demand for more research will likely increase because this study as well as another study on ozone and mortality appearing in the same issue of

the *AJRCCM* suggest the need for a stricter ozone standard.

Provided by American Thoracic Society

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