

Rising Ozone Levels Associated with ARDS



A new study shows that exposure to higher daily levels of ozone is associated with development of acute respiratory disease syndrome (ARDS) in critically ill patients, particularly in trauma patients and current smokers. The findings, reported in the *American Journal of Respiratory and Critical Care Medicine*, indicate that ozone exposure may represent a previously unrecognized environmental risk factor for ARDS.

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 current study by Lorraine Ware, MD, of Vanderbilt University School of Medicine, and colleagues is the first to demonstrate a risk related to ozone.

The researchers analysed exposure using a heterogeneous group of 1,558 critically ill patients from the Validating Acute Lung Injury Biomarkers for Diagnosis cohort. Subjects enrolled in 2006-2012 were included if a residential address was available, they lived within 50 km of at least one air quality monitor and had an ARDS risk factor (ie, trauma, smoking, alcohol use).

The research team 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," the authors note.

"The generalisability of this most recent study is enhanced given the large and heterogeneous cohort we had at our disposal," Dr. Ware points out. "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.

Source: [American Thoracic Society](#)

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