Smoggy days may raise your odds for burst appendix

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Study found the risk rose by up to 22 percent after consecutive high-ozone days.

(HealthDay)—Add another possible health woe to the negative effects of air pollution: A new study suggests that the risk of a burst appendix rises on smoggy days.

Data from 12 Canadian cities found that "short-term exposure to ambient ozone [in air] was associated with an increased number of hospital visits for appendicitis," according to a team led by Dr. Gil Kaplan of the University of Calgary.

The risk for perforated (burst) appendix rose by up to 22 percent with every 16 parts-per-billion rise of ozone in the air over the three to seven days prior to the appendicitis incident, the researchers reported in the July 11 online edition of *Environmental Health Perspectives*.

The study "highlights a previously unrecognized association between air pollutants such as ozone emitted by burning fossil fuels, and an increased risk for perforated appendicitis," said Dr. Robert Glatter, an emergency room physician at Lenox Hill Hospital in New York City. He was not involved in the study.

In their study, the researchers noted that appendicitis—an inflammation of the tiny, remnant organ known as the appendix—will strike about one in every 15 people. A ruptured appendix can prove fatal if untreated, and is a common cause of emergency surgery.

"Perforation occurs in 16 to 40 percent of cases of acute appendicitis, and is associated with an increased rate of complications including wound infections, intra-abdominal abscesses, as well as small bowel obstructions," Glatter said.

Kaplan's team said that the exact triggers for appendicitis remain unknown, but air pollution might be one of them. "A decrease in the incidence of appendicitis in developed countries during the latter part of the 20th century coincided with the enactment of legislation that led to reductions in the concentrations of several outdoor air pollutants," they pointed out.

Animal studies have also suggested that air pollution might spur changes in the gut that could boost appendicitis risk.

In the study, the investigators tracked rates of emergency care for appendicitis involving nearly 36,000 patients treated in 12 Canadian cities between 2004 and 2008.

Short-term hikes in ozone (a component of smog) coincided with upticks in emergency care for perforated appendix, but not appendicitis without perforations, the authors said. About one-third (31 percent) of the cases of appendicitis in the study involved a perforated appendix.

The risk for perforated appendix rose as the number of consecutive smoggy days increased, the researchers added. Fluctuations in temperature and humidity did not seem to have an impact on appendicitis rates.

The authors stress that the study cannot prove that smog helps cause a burst appendix, and other factors might be at play.

Still, one other expert said that any information on

how appendicitis might be predicted, prevented or treated is important.

"In very young patients and the elderly, perforated appendicitis can be a very severe condition and even lethal for these vulnerable populations, often due to a delay in diagnosis," said Dr. Edward Chin, an associate professor of surgery at the Icahn School of Medicine at Mount Sinai, in New York City. "If research points to ways to prevent this, that would be remarkable."

And Glatter believes the study might even have an environmental message.

"The findings from this study potentially provide further motivation for 'going green' and reducing emissions from burning fossil fuels—specifically, as a way to reduce the risk for developing perforated appendicitis in at-risk persons," he said.

More information: There's more about appendicitis at the U.S. National Institute of Diabetes and Digestive and Kidney Diseases.