

Air pollution may increase risk for childhood leukemia

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Exposure to traffic-related air pollution may be associated with an

increased risk for childhood leukemia, according to a study published in the August issue of *Environment International*.

Christian Kreis, Ph.D., from the University of Bern in Switzerland, and colleagues investigated the association between traffic-related air pollution and the risk for childhood cancer (younger than 16 years of age). The analysis included 2,960 incident cases of childhood cancer identified from the Swiss Childhood Cancer Registry (1990 to 2015) and probabilistically linked cases with the census-based Swiss National Cohort study.

The researchers found that for exposure to [nitrogen dioxide](#) per 10 $\mu\text{g}/\text{m}^3$, the adjusted hazard ratio was 1.00 (95 percent confidence interval, 0.88 to 1.13) for [acute lymphoblastic leukemia](#) (ALL) and 1.31 (95 percent confidence interval, 1.00 to 1.71) for [acute myeloid leukemia](#) (AML). The effect for AML was attenuated when using a one-to five-year exposure lag instead of current exposure. For exposure to benzene per 1 $\mu\text{g}/\text{m}^3$, the adjusted hazard ratio was 1.03 (95 percent confidence interval, 0.86 to 1.23) for ALL and 1.29 (95 percent confidence interval, 0.86 to 1.95) for AML. Increased hazard ratios were detected for non-Hodgkin lymphoma.

"The follow-up period of 2.5 decades allowed us to assess the association between air pollution and [childhood cancer](#) risk using time-varying exposure data during a time when ambient concentrations of many air toxins, including nitrogen dioxide and benzene, have fallen in Switzerland," the authors write.

More information: Christian Kreis et al, Childhood cancer and traffic-related air pollution in Switzerland: A nationwide census-based cohort study, *Environment International* (2022). [DOI: 10.1016/j.envint.2022.107380](#)

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