

Publication**Air pollution and childhood leukaemia : a nationwide case-control study in Italy****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 2290330**Author(s)** Badaloni, C; Ranucci, A; Cesaroni, G; Zanini, G; Vienneau, D; Al-Aidrous, F; De Hoogh, K; Magnani, C; Forastiere, F; SETIL Study Group**Author(s) at UniBasel** [Vienneau, Danielle](#) ;**Year** 2013**Title** Air pollution and childhood leukaemia : a nationwide case-control study in Italy**Journal** Occupational and environmental medicine**Volume** 70**Number** 12**Pages / Article-Number** 876-83**Keywords** Land use Regression Model, Children, Traffic Indicators, Dispersion Model

Leukaemia is the most common cancer in children, but its aetiology is still poorly understood. We tested the hypothesis that traffic-related air pollution is associated with paediatric leukaemia because of chronic exposure to several potential carcinogens.; The Italian SETIL study (Study on the aetiology of lymphohematopoietic malignancies in children) was conducted in 14 Italian regions. All incident cases of leukaemia in children aged ≤ 10 years from these regions (period 1998-2001) were eligible for enrolment. Two controls per case, matched on birth date, gender and region of residence were randomly selected from the local population registries. Exposure assessment at birth residence included traffic indicators (distance to main roads and length of main roads within 100 m) and estimates of pollutants concentrations (particulate matter -PM_{2.5} and PM₁₀- and gases -NO₂ and O₃-) from national dispersion model and land use regression models. The association between the exposure variables and leukaemia was assessed by logistic regression analyses.; Participation rates were 91.4% among cases and 69.2% in controls; 620 cases (544 acute lymphocytic and 76 acute non-lymphocytic leukaemia) and 957 controls were included. Overall, when considering the residence at birth, 35.6% of cases and 42.4% of controls lived along busy roads, and the mean annual PM₁₀ levels were 33.3 (SD=6.3) and 33.4 $\mu\text{g}/\text{m}^3$ (SD=6.5), respectively. No association was found, and all ORs, independent of the method of assessment and the exposure windows, were close to the null value.; Using various exposure assessment strategies, air pollution appears not to affect the incidence of childhood leukaemia.

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