

Publication**An association of particulate air pollution and traffic exposure with mortality after lung transplantation in Europe****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3749281**Author(s)** Rutters, David; Verleden, Stijn E.; Bijmans, Esmée M.; Winckelmans, Ellen; Gottlieb, Jens; Warnecke, Gregor; Meloni, Federica; Morosini, Monica; Van Der Bij, Wim; Verschuuren, Erik A.; Sommerwerck, Urte; Weinreich, Gerhard; Kamler, Markus; Roman, Antonio; Gomez-Olles, Susana; Berastegui, Cristina; Benden, Christian; Holm, Are Martin; Iversen, Martin; Schultz, Hans Henrik; Luijk, Bart; Oudijk, Erik-Jan; Kwakkel-van Erp, Johanna M.; Jaksch, Peter; Klepetko, Walter; Kneidinger, Nikolaus; Neurohr, Claus; Corris, Paul; Fisher, Andrew J.; Lordan, James; Meachery, Gerard; Piloni, Davide; Vandermeulen, Elly; Bellon, Hannelore; Hoffmann, Barbara; Vienneau, Danielle; Hoek, Gerard; de Hoogh, Kees; Nemery, Benoit; Verleden, Geert M.; Vos, Robin; Nawrot, Tim S.; Vanaudenaerde, Bart M.**Author(s) at UniBasel** [Vienneau, Danielle](#) ; [de Hoogh, Kees](#) ;**Year** 2017**Title** An association of particulate air pollution and traffic exposure with mortality after lung transplantation in Europe**Journal** The European respiratory journal**Volume** 49**Number** 1**Pages / Article-Number** 1600484

Air pollution from road traffic is a serious health risk, especially for susceptible individuals. Single-centre studies showed an association with chronic lung allograft dysfunction (CLAD) and survival after lung transplantation, but there are no large studies. 13 lung transplant centres in 10 European countries created a cohort of 5707 patients. For each patient, we quantified residential particulate matter with aerodynamic diameter $\leq 10\mu\text{m}$ (PM₁₀) by land use regression models, and the traffic exposure by quantifying total road length within buffer zones around the home addresses of patients and distance to a major road or freeway. After correction for macrolide use, we found associations between air pollution variables and CLAD/mortality. Given the important interaction with macrolides, we stratified according to macrolide use. No associations were observed in 2151 patients taking macrolides. However, in 3556 patients not taking macrolides, mortality was associated with PM₁₀ (hazard ratio 1.081, 95% CI 1.000-1.167); similarly, CLAD and mortality were associated with road lengths in buffers of 200-1000 and 100-500m, respectively (hazard ratio 1.085- 1.130). Sensitivity analyses for various possible confounders confirmed the robustness of these associations. Long-term residential air pollution and traffic exposure were associated with CLAD and survival after lung transplantation, but only in patients not taking macrolides.

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