Long-term exposure to traffic-related air pollution and stroke: a systematic review and meta-analysis

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4652623
Author(s) Haddad, P.; Kutlar Joss, M.; Weuve, J.; Vienneau, D.; Atkinson, R.; Brook, J.; Chang, H.; Forastiere, F.; Hoek, G.; Kappeler, R.; Lurmann, F.; Sagiv, S. K.; Samoli, E.; Smargiassi, A.; Szpiro, A.; Patton, A. P.; Boogar,; Hoffmann, B.
Author(s) at UniBasel Kutlar Joss, Meltem ; Vienneau, Danielle ; Kappeler, Ron ;
Year 2023
Title Long-term exposure to traffic-related air pollution and stroke: a systematic review and meta-analysis
Journal Int J Hyg Environ Health
Volume 247
Pages / **Article-Number** 114079
Mesh terms Humans; Stroke, epidemiology; Traffic-Related Pollution; Cardiovascular Diseases; Databases, Factual; Air Pollution, adverse effects
Background Stroke remains the second cause of death worldwide. The mechanisms underlying the adverse association of exposure to traffic-related air pollution (TRAP) with overall cardiovascular disease may also apply to stroke. Our objective was to systematically evaluate the epidemiological evidence regarding the associations of long-term exposure to TRAP with stroke. Methods PubMed and LUDOK electronic databases were searched systematically for observational epidemiological studies from 1980 through 2019 on long-term exposure to TRAP and stroke with an update in January 2022. TRAP was defined according to a comprehensive protocol based on pollutant and exposure assessment methods or proximity metrics. Study selection, data extraction, risk of bias (RoB) and confidence assessments were conducted according to standardized protocols. We performed meta-analyses using random effects models; sensitivity analyses were assessed by geographic area, RoB, fatality, traffic specificity and new studies. Results Nineteen studies were included. The meta-analytic relative risks (and 95% confidence intervals) were: 1.03 (0.98-1.09) per 1 μg/m3 EC, 1.09 (0.96-1.23) per 10 μg/m3 PM10, 1.08 (0.89-1.32) per 5 μg/m3 PM2.5, 0.98 (0.92; 1.05) per 10 μg/m3 NO2 and 0.99 (0.94; 1.04) per 20 μg/m3 NOx with little to moderate heterogeneity based on 6, 5, 4, 7 and 8 studies, respectively. The confidence assessments regarding the quality of the body of evidence and separately regarding the presence of an association of TRAP with stroke considering all available evidence were rated low and moderate, respectively. Conclusion The available literature provides low to moderate evidence for an association of TRAP with stroke.
URL https://doi.org/10.1016/j.ijheh.2022.114079
edoc-URL https://edoc.unibas.ch/91262/
Full Text on edoc Available;
Digital Object Identifier DOI 10.1016/j.ijheh.2022.114079
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/36446272
ISI-Number MEDLINE:36446272
Document type (ISI) Journal Article