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Towards estimating global road traffic noise exposure for burden of disease estimations

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ABSTRACT

Road traffic noise contributes considerably to environmental burden of disease but is not yet quantified at a global scale. With the continuing increase in computational power, as well as improving algorithms and computational techniques such as machine learning, it is becoming feasible to perform road traffic noise exposure estimations on a global scale. The data sources used for global noise mapping need to be of comparable resolution, structure and quality across regions and continents, and be openly available both for present and future mapping efforts. Data sources used to assess exposure to other environmental risk factors in the global burden of disease study are ideal and could also be used for estimation of burden of disease due to noise, particularly data used in the global models for exposure to specific air pollutants like NO2 and PM2.5. This paper lists different data sources, including remote sensing, global and regional statistics, and open map data, and compares them in terms of availability, resolution, and usefulness for global road traffic noise exposure estimation. This is the first step towards the development of a global exposure model for inclusion of road traffic noise as an environmental risk factor in the global burden of disease study.

Keywords (3-6): road traffic noise, exposure, global burden of disease