Living close to the railway: effects of vibration and noise from rail traffic on diabetes prevalence.

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ABSTRACT

Rail traffic is expected to increase in Sweden following policy recommendations for a more sustainable transportation model. Still, little is known about the cardiometabolic health effects of rail traffic vibration and noise for people living close to the railways. This analysis aims to investigate the effects of rail traffic vibration and noise on diabetes and to assess whether/how these two exposures interact. The study population (N=5381) was randomly selected from residents living within 1km of a trafficked railway in Västra Götaland region in Sweden. Survey data was combined with modeled exposures and health register data (ICD10 codes). The study uses a cross sectional design and logistic regression analysis. Preliminary results suggest an increase in the prevalence of diabetes associated with the exposure to vibration (OR=1.06 per 0.01 mm/s increase; 95% CI 1.01-1.12) and noise (L_{den}) (OR=1.25 per 10 dB increase; 95% CI 1.02-1.54) in separate models, accounting for sociodemographic and life style factors. Analysis of an interaction between vibration and noise is ongoing. Findings have implications for the researcher community and decision-makers in several areas for instance public health.