

RISK FACTORS

Women living near to a road at increased risk of sudden cardiac death

Women who live close to a major roadway might have an increased risk of sudden cardiac death, according to an analysis of data from the prospective Nurses' Health Study in the USA. These women also have an elevated risk of other forms of cardiovascular disease.

During 26 years of follow-up in the Nurses' Health Study, 523 instances of sudden cardiac death were recorded among 107,130 participants. After adjusting for age and ethnicity, women who lived within 50 m of a major roadway had a 56% increased risk of sudden cardiac death (HR 1.56, 95% CI 1.18–2.05), compared with those who lived further away. After further adjustment for other potential confounders, the risk of sudden cardiac death associated with living close to a road remained significantly elevated (HR 1.38, 95% CI 1.04–1.82). These women also had an increased risk of fatal coronary heart disease (HR 1.24, 95% CI 1.03–1.50),

but not of nonfatal myocardial infarction (HR 1.08, 95% CI 0.96–1.23).

The investigators speculate that “long-term exposure to traffic may be associated with sudden cardiac death, both through the development of underlying atherosclerosis and by influencing myocardial vulnerability to lethal ventricular arrhythmias”. They go on to state that “traffic-related air pollution has also been associated with elevations in systemic inflammation, oxidative stress, heart failure, and alterations in autonomic function and heart rate variability”. Exposure to air pollution and noise associated with traffic is highly prevalent and, therefore, represents an important and potentially modifiable population-level risk factor for sudden cardiac death.

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Original article Hart, J. E. *et al.* Roadway proximity and risk of sudden cardiac death in women. *Circulation* doi:10.1161/CIRCULATIONAHA.114.011489