

Traffic noise in the bedroom in association with being overweight or obese: a cross-sectional study of the Respiratory Health in Northern Europe cohort

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ABSTRACT

Previous research suggests an association between road traffic noise and obesity, but current evidence is inconclusive. We aimed to investigate associations between self-reported traffic noise in bedrooms and self-measured obesity markers. We applied data from the Respiratory Health in Northern Europe (RHINE) cohort. We used self-measured waist circumference (WC) and body mass index (BMI) as outcome values. Noise exposure was assessed as perceived traffic noise in the bedroom and/or the bedroom window's location towards the street. We applied linear, and logistic regression models and evaluated effect modifications by sex. Women who reported higher exposure to road traffic noise had statistically significant higher odds of being overweight, obese or have abdominal obesity with OR varying from 1.16 to 1.67 compared to women, who reported no traffic noise in the bedroom. Women, who reported very high traffic noise levels in bedroom, had 1.35 (95% CI 0.32–2.38) kg/m² higher BMI and 4.66 (95% CI 1.83–7.48) cm higher WC compared to women, who reported no traffic noise in the bedroom. Among men we did not find any clear associations between noise pollution and obesity measures. Our results suggest that self-reported traffic noise in the bedroom may be associated to being overweight or obese among women, but not among men.

Keywords (3-6): Noise, Obesity, Overweight, Adiposity, Indoor, Nocturnal, Self-reported, Traffic