

Publication

Sleep fragmentation and sleep-disordered breathing in individuals living close to main roads : results from a population-based study

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Nighttime traffic noise is associated with sleep disturbances, but sleep fragmentation and sleep-disordered breathing (SDB) have not been demonstrated in individuals living near busy roads.; We asked 1383 participants to answer a health questionnaire and to undergo 24-h electrocardiogram (ECG). Nocturnal ECG records were used to calculate the very low frequency index (VLFI) interval, a surrogate marker of sleep fragmentation. Distances of participants' addresses to roadways were calculated using the VECTOR25! Swisstopo roads classification, a traffic noise proxy. Distances of homes within 100 or 50m of major roads defined proximity to busy roads. Adjusted multivariate logistic regressions analyzed associations between the distance of home to main roads and VLFI or self-reported SDB.; Distance of participants' homes to main roads was significantly associated with the VLFI in women (odds ratio [OR], 1.58 [confidence interval {CI}, 1.03-2.42]; P=.038) but not in men (OR, 1.35 [CI, 0.77-2.35]; P=.295). Women under hormonal replacement therapy (HRT) were at higher risk for increased VLFI when living close to main roads (OR, 2.10 [CI, 1.20-3.68]; P=.01) than untreated women (P=.584). Associations with self-reported SDB were not statistically relevant.; In our large population, women living close to main roads were at significantly higher risk for sleep fragmentation than men. The 2-fold higher risk for menopausal women under HRT underscores the vulnerability of this group.

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