

## **Rail traffic noise and sleep disturbances**

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### **ABSTRACT**

**Background:** There is an ongoing increase in transportation by railway. This could impact on sleep due to more noise emission during night-time.

**Objectives:** The aim of the study was to investigate the association between nocturnal rail traffic noise (train, tram and subway) and self-reported sleep disturbances.

**Methods:** We used data from the population-based Health and Environment in Oslo (HELMILO) study (n=13 019) of adults, only including individuals living within 700 meters to a railway (n=6426). Railway noise ( $L_{night}$ ) at the most exposed façade was assessed using the Nordic Prediction Method. We used logistic regression adjusting for potential confounders.

**Results:** Positive, however, not statistically significant associations were shown for difficulties falling asleep (odds ratio [OR] = 1.04; 95% confidence interval [CI]: 0.99–1.08), and waking up to early (OR = 1.02; 95% CI: 0.98–1.07) per 5-dB increase in noise level.

**Conclusions:** Rail traffic noise was only weakly associated with self-reported sleep disturbances. Still, the positive effect estimates indicate that sleep may be affected by rail traffic noise to some degree in the beginning and the end of the night.