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Medication use and transportation noise exposure

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1. INTRODUCTION

Long-term exposure to noise from aircraft and road traffic is associated with effects on well-being such as sleep disturbance and annoyance and with physiological responses such as hypertension.

Within the framework of the HYENA (Hypertension and Exposure to Noise near Airports) project, we investigated the effect of long-term exposure to aircraft and road noise on the usage of selected prescribed medication.

2. METHODS

Use of prescribed medication for hypertension, stomach ulcer, cancer, sleep disorders, psychiatric disorders and respiratory diseases was measured by a cross-sectional survey of 4,861 persons 45-70 years of age, who had lived at least 5 years near any of six major European airports. Noise exposure was assessed using detailed models with a resolution of 1dB (5dB for UK road traffic noise) and spatial resolution of 250x250m for aircraft noise and 10x10m for road traffic noise.

3. RESULTS

An increased risk of taking anti-hypertensive and anxiolytic medication was found for those exposed to aircraft noise at night, after adjustment for major confounders. A 10dB increase in night-time aircraft noise exposure was associated with an odds ratio (OR) of 1.12 (95% CI, 1.03-1.21) in taking anti-hypertensives and an OR of 1.24 (95% CI,1.00-1.54) for taking anxiolytics.

4. CONCLUSIONS

Results indicate excess risks of hypertension related to long-term exposure to aircraft noise. The association found between aircraft noise and anxiolytic use is consistent with the hypothesis suggesting health effects of noise are stress-mediated.

The full paper on this topic has not been produced because of the potential impact on a future peer review publication.