

## Live Near an Airport? Nighttime Airplane Noise May Cause Hypertension

Liam Davenport, Medscape.com | JUN 16, 2017

ATHENS, GREECE — Long-term exposure to nighttime aircraft noise in people living near a major airport is associated with both prevalent and incident hypertension and, perhaps, with doctor-diagnosed arrhythmias, suggests a rare longitudinal cohort study to explore the issue[1].

Every 10-dB increase in exposure to aircraft noise at night more than doubled the risk of incident hypertension, a significant increase; no significant increase was observed when considering both prevalent and incident cases of hypertension, according to the report published June 13, 2017 in Occupational and Environmental Medicine.

Although the reason behind the hypertension–aircraft noise link is unclear, it doesn't seem to be related to "annoyance" with such noise, senior author Prof Klea Katsouyanni (University of Athens Medical School, Greece) told [theheart.org|Medscape Cardiology](http://theheart.org|Medscape Cardiology). Annoyance was measured in the cohort by expert personal interview using a validated questionnaire.

Still, in Europe at least, steps have been taken to reduce nighttime flights from airports, Katsouyanni noted. "I think that this study and similar studies give more justification for such policies."

Although the adjusted analysis couldn't account for the potential influence of airport-related air pollution on cardiovascular outcomes, there was no apparent association between nighttime noise and such outcomes sometimes associated with pollution such as MI, stroke, or diabetes. Such links with airport-related noise [have been observed](#) in cross-sectional studies.

"We did not adjust for air-pollution levels as the area has no monitors allowing the assessment of geographical variations," the group reports. A next step, Katsouyanni said, "would be to study the interactions between noise and air pollution, because these two exposures [derive from] the same sources to some extent."

The cohort consisted of 420 individuals who lived in a community adjacent to Athens International Airport who had previously taken part in a [2004–2006 cross-sectional survey](#) of persons living near six large European airports.

At baseline, their mean age was 58; about 56% were female, 44.3% were male. They were followed up in 2013 with a home visit and a questionnaire on health events and household characteristics.

During follow-up, 71 participants were diagnosed with hypertension and 44 were diagnosed with cardiac arrhythmia. (Hypertension was defined by blood pressure per guidelines or a physician diagnosis leading to antihypertensive therapy.) MI occurred in a further 18 participants.

In adjusted analysis, every 10-dB rise in aircraft-noise exposure at night (11 PM to 7 AM) was associated with an odds ratio (OR) for incident hypertension of 2.63. Doctor-diagnosed cardiac arrhythmia also showed a significant association with such a nighttime noise increase for incident and prevalent cases combined; the OR was 2.09.

On multivariable regression analysis, the estimated hazard ratio for hypertension for every 10-dB increment in nighttime aircraft noise was 3.39 (95% CI 0.87–13.3).

## Odds Ratio (95% CI) for Outcomes per 10-dB Increase In Nighttime Aircraft Noise Exposure at Home

End points	Prevalent and incident cases, OR (95% CI)	Incident cases only, OR (95% CI)
Hypertension	1.69 (1.01–2.82)	2.63 (1.21–5.71)
Arrhythmia (doctor-diagnosed)	2.09 (1.07–4.08)	1.88 (0.85–4.19)
Hearing impairment (doctor-diagnosed)	2.04 (1.06–3.91)	3.51 (1.46–8.44)

Adjusted for baseline age, sex, body-mass index, alcohol intake, education, exercise, smoking, salt intake

No such significant increases were observed for all cases or incident cases of doctor-diagnosed stroke, MI, or diabetes.

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