



Environment and Health – Bridging South, North, East and West

Conference of ISEE, ISES and ISIAQ
Basel, Switzerland 19 – 23 August 2013

[Overview](#)
[Search](#)
[Contributors](#)
[Favorites](#)
[Profile](#)
[back](#)

P-3-07-03 Frequency components of measured road traffic noise and the prevalence of hypertension in Taichung, Taiwan

Information

Duration	- min.
Discussion	- min.
Presentation as	Poster

Authors

Name	Institute	Country
➔ Ta-Yuan Chang *	China Medical University	Taiwan
➔ Rob Beelen	Institute for Risk Assessment Sciences, Division Environment	United Kingdom
➔ Su-Fei Li	Department of Occupational Safety and Health, China Medical	Taiwan
➔ Bo-Ying Bao	Department of Pharmacy, China Medical University	Taiwan
➔ Chiu-Shong Liu	China Medical University and Hospital	Taiwan

Abstract

Background Epidemiological studies have reported the association between hypertension and road traffic noise exposure, but the association between noise frequency characteristics is unclear. **Aims** This study investigated the association between exposure to different frequency components of road traffic noise and the prevalence of hypertension in central Taiwan. **Methods** We recruited 820 residents living near main roads for more than 3 years. Frequency components of traffic noise and traffic flow rates were measured simultaneously in 2008. Multiple logistic regressions were conducted to estimate odds ratios (ORs) for hypertension, adjusting for potential confounders. **Results** The high-exposure group (³ median value) at 63 Hz, 125 Hz and 1000 Hz had ORs for hypertension of 2.14 (95% confidence interval [CI]: 1.06-4.31), 2.51 (95% CI: 1.21-5.21) and 1.99 (95% CI: 1.01-3.93), respectively, compared to the low-exposure group (< median value). There was an increasing trend in the prevalence of hypertension by exposure to road traffic noise at 63, 125 and 1000 Hz in all subjects and in men. Subjects exposed to ³ 51 decibels (dB) at 125 Hz had an OR of 3.59 (95% CI: 1.23-10.45) compared to those exposed to < 47 dB. **Conclusions** Exposure to road traffic noise at low and medium frequencies may be associated with hypertension, and exposure to noise at 125 Hz may have the largest effect on hypertension.

