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Title: Traffic air pollution and prevalence of respiratory symptoms

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Body: Background: Little is known of potential sex differences in associations between traffic air pollution and respiratory symptoms in adults. Aims: To examine how exposure to traffic pollution is associated with prevalence of respiratory symptoms in men and women. Methods: As part of the Respiratory Health In Northern Europe (RHINE) study, 12319 subjects 38-65 yrs answered questionnaires on risk exposures and respiratory symptoms in 2010-12. We performed logistic regression using bedroom near a road with moderate/much traffic as proxy for traffic air pollution exposure. Outcomes were respiratory symptoms (chest tightness, long-term cough, cough with phlegm, wheeze, asthma attacks and nocturnal dyspnea attacks). Analyses were adjusted for study centre, age, smoking and education level. Results: 10% lived near a busy road. Symptom prevalence varied from 4% asthma attacks to 19% wheeze. Subjects who lived near busy roads had 1.2-1.9 times higher adjusted odds ratio for respiratory symptoms than unexposed subjects. Traffic exposure was associated with chest tightness, wheeze and nocturnal dyspnea attacks for both sexes ($p<0.05$), and also with phlegm cough and asthma attacks for women ($p<0.05$).

Adjusted ORs (95%CI) for respiratory symptoms, subjects with bedroom near road with traffic.

	Men	Women
Chest tightness	1.4 (1.2, 1.7)	1.4 (1.1, 1.7)
Long-term cough	1.2 (0.9, 1.5)	1.2 (0.9, 1.5)
Phlegm cough	1.0 (0.9, 1.1)	1.2 (1.0, 1.5)
Wheeze	1.0 (0.9, 1.0)	1.5 (1.2, 1.8)
Asthma attacks	0.5 (0.2, 1.3)	1.7 (1.2, 2.3)
Dyspnea attacks	1.3 (1.0, 1.7)	1.9 (1.4, 2.4)

Conclusions: Living close to a busy road was associated with increased prevalences of respiratory symptoms in both sexes, but associations were found for more symptoms among women than men.