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Title: Effects of high ambient ozone on lung function, nasal flow and exhaled NO

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Body: Background: Clinical studies have shown that ozone (O₃) exposure exacerbates respiratory symptoms. The aim of the present study was to investigate the relationship between elevated atmospheric ozone concentrations and lung function parameters, nasal airflow and exhaled NO before and 2 hours after brisk walking. Methods: Thirty non-smokers volunteers (33.6±12 year old) with no history of respiratory/allergy diseases underwent spirometry, rhinomanometry and FeNO measurement (Niox Mino, Aerocrine) before and 2 hours after brisk walking during two separate days in Panorama (altitude 330m), Thessaloniki, Greece ; one with low (March 2012, visit 2) and one with high (June 2011, visit 1) ozone level. We compared differences (post-pre walking %) for all measurements. Results: Concentration of ozone was: 197 µg/m³ (average hourly value) and 90 µg/m³ for the two days. As it is shown in table 1, % differences were similar for all parameters.

Table 1. Comparison of differences (post-pre walking) for all measured parameters between the two visits

Differences (%)	High ozone level	Low ozone level	p-value
ΔNO	-14.8 (CI: -22.5, 1.3)	0 (CI: -16.7, 13.2)	0.06
Δ(Nasal Flow Sum)	5.5 (CI: -6.2, 26.5)	7.7 (CI: 2.6, 20.2)	0.8
ΔFVC	1.4 (CI: 1, 3.1)	1.1 (CI: 0, 2)	0.1
ΔFEV1	2.6 (CI: 1.5, 3.7)	1.9 (CI: 0.8, 3.2)	0.5

Conclusion: We found that acute exposure to ambient ozone levels above permissible limits had no significant effects on lung function, nasal airflow and exhaled NO.