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## Lung alert

### Diesel exhaust adversely affects people with moderate asthma

Road traffic pollutions may trigger asthma symptoms and exacerbations, and this is mainly attributed to polycyclic aromatic hydrocarbon core diesel exhaust particles (DEP).

The authors carried out a randomised crossover study enrolling 60 non-smoking adults with stable mild and moderate asthma. Each participant was required to walk for 2 hours (10.30–12.30 hours) along Oxford Street, London (used by only diesel powered buses and taxis) and traffic-free Hyde Park during weekdays only between November and March to avoid the pollen season. Both forced expiratory volume in 1 s (FEV<sub>1</sub>) and forced vital capacity (FVC) were measured immediately before and each hour during the walk and various measurements were obtained for the following 12 h. Concentrations of ultrafine particles, nitrogen dioxide and elemental carbon were measured.

This study showed asymptomatic but consistent spirometric reductions (FEV<sub>1</sub> up to 6.1% and FVC up to 5.4%) in patients with moderate asthma after walking along Oxford Street. These changes were associated with an increase in markers of neutrophilic inflammation (sputum myeloperoxidase and the pH of their exhaled breath condensate). Participants had significantly higher exposures to ultrafine particles, nitrogen dioxide and elemental carbon on Oxford Street than in Hyde Park, suggesting that DEP may affect airway inflammation in asthma.

The authors point out that the inevitably unblinded nature of the study and the effect of other factors such as noise and stress in a busy road may be confounding factors in this study, but further study is warranted on the basis of these results. They do not currently recommend that people with asthma stop visiting or working in busy urban environments.

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