

Asthma and Air Pollution

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Childhood Asthma



- Air pollution is an aggravation and, possibly, a cause

Subject Characteristics



- 19 subjects: 14 male, 5 female
- Ages 6-13
- Medication use:
10 inhaled corticosteroid (ICS) users
9 ICS nonusers
- FEV1%: 67-100%

Objectives

- To evaluate whether exhaled nitric oxide is a useful marker of airway inflammation in field studies of air pollution
- To determine whether exposure to fine particulate air pollution (PM_{2.5}) is associated with increases in FeNO



- We are currently measuring eNO 3 times daily, in adult subjects over 50 with lung disease, in an ongoing study this heating season
- Incorporate a scrubbing device to provide NO free inhaled air and control more carefully for flow rate during collection

Results ICS nonusers:N=10

For a 10 ug/m³ increase in PM_{2.5}, FeNO increased

- Personal monitoring:
4.5(95% CI: 1.02, 7.9)
- Indoor monitoring:
4.2(95% CI: 1.02, 7.4)
- Outdoor monitoring:
4.35 (95% CI: 1.4, 7.2)
- Central site
3.8 (95% CI: 1.2, 6.4)