

Environmental Impact and Influence on Asthma

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Outline of presentation

- What's asthma?
- What's the pollutants ?
- Does air pollution *cause* asthma?
- Does air pollution *aggravate* asthma?

What is asthma?

- Symptoms of wheeze, attacks of Short of breath
- Chronic cough
- Cough at night, cough with exercise
- Abnormal lung function
- Bronchial hyper-responsiveness
- Sensitization to allergens

Does air pollution *cause* asthma?

- The worldwide variation in asthma prevalence is large
- Asthma seems to be associated with a 'western lifestyle'
- Pollution is often higher in developing countries than in countries with a 'western lifestyle'.

Different Pollutants

- Developing countries: Biomass burning
- Developed countries: Traffic related pollutants

Traffic related pollution

$\text{NO}_x + \text{VOC's} + \text{Sunlight}$
 $= \text{Ozone}$

Major ambient air pollutants and their origins

Pollutant	Origin
Particulate matter	Particles found in ambient air such as dust and dirt of varying diameters. Major sources are vehicle emissions, construction sites, burning of wood or other fuels.
Sulfur dioxide	Combustion of sulfur containing fuel such as coal and oil
Nitrogen oxides	Burning of fuel at high temperature, motor vehicle, electric power plant and other industrial sources
Carbon monoxide	Motor vehicle emission, airplane engines and other industrial sources
Ozone	Photochemical reaction of oxides of nitrogen and volatile organic compounds

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ISAAC
Phase Three

Symptoms of Clinical Asthma
Total Participants Denominator
13-14 Year Age Group

