

Traffic pollution worsens symptoms in asthmatic children

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Traffic pollution, especially in cities, adversely affects respiratory health in children with asthma. A study published in BioMed Central's open access journal *Respiratory Research* has found that in this vulnerable group, worsening of respiratory symptoms requiring recurrent additional treatment.

A Mexican research team led by Dr Isabelle Romieu of the Instituto Nacional de Salud Publica, correlated pollutants associated with exacerbation of respiratory symptoms in asthmatic children. Earlier studies suggest that traffic pollution, and diesel particles in particular, may have a greater effect on respiratory health than other pollutants. This is significant as a large proportion of pollution in cities originates from motor vehicles. At present, no studies have clearly linked different types of vehicular traffic exhaust to respiratory health of either asthmatic or healthy children.

147 asthmatic children and 50 non-asthmatic children, between the ages of 6 and 14, were recruited through a paediatric hospital in Mexico City. Parents kept a daily record of coughing and wheezing experienced by their children, as well as medication usage. Atmospheric levels of the pollutants ozone, nitrogen dioxide and diesel particles were recorded in Mexico City during the study. The amount and type of traffic in areas inhabited by the volunteers was also recorded in order to evaluate whether diesel-fuelled vehicles had a greater impact upon respiratory health than pollution from other vehicles.

In asthmatic children, coughing, wheezing and medication usage was associated with increased levels of atmospheric pollutants. In healthy volunteers, increased coughing was only seen with higher levels of nitrogen dioxide. Children living in areas with high levels of traffic more often experienced worsening of asthma symptoms and greater use of medication. Small buses for public transport running on petrol/natural gas, and larger buses and trucks running on diesel, were more strongly associated with worsening of symptoms.

Although oxidative stress has been shown to be a major underlying feature of the toxic effect of air pollutants, there is still a need for a better understanding of the actual mechanisms by which pollutants cause exacerbation of respiratory symptoms. Romieu points out that, all types of traffic exhaust have an adverse effect on children respiratory health and that given the proximity of many schools to roads with heavy traffic, "these results have significant implications for public health policy within cities in Mexico and the rest of the world".

Source: BioMed Central

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