

ENVIRONMENTAL EXPOSURE AT DAY CARE CENTRES: ARE OUR CHILDREN AT RISK?

[Program and Abstracts: The Seventeenth Conference of the International Society for Environmental Epidemiology (ISEE): Abstracts]

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ISEE-380

Introduction: 🏠

This study aimed to characterise the exposure of 5-year old children attending pre-school facilities in Pretoria to lead (as an example of an environmental pollutant) in air and surface soil, specifically in relation to their activity patterns.

Methods: 🏠

The study was conducted during winter (July 2001), at 30 pre-school facilities in Soshanguve and at 24 pre-schools in Pretoria East. Questionnaires, time-activity diaries, as well as the concentrations of lead in air, surface soil and dust were statistically analysed to determine exposure to lead in air, lead concentrations in surface soil and dust, and risk factors associated with inhalation exposure to lead.

Results: 🏠

The study found that environmental lead levels, especially in air, were generally low. In Pretoria East, where traffic counts were higher than in Soshanguve, lead exposure to airborne lead was also significantly higher. In contrast, it was found that mean soil lead concentrations and surface dust lead loadings were higher in Soshanguve compared to those in Pretoria East.

Discussion: 🏠

This study found that certain features associated with a pre-school may affect the degree of exposure of children to environmental pollutants. Recommended measures which may assist in reducing the risk of exposure include locating future pre-schools away from busy roads, roads that slope steeply, or from busy crossings where traffic stops and starts, thus increasing motor vehicle emissions. It is also advisable to monitor traffic volumes on roads close to planned pre-schools in advance. Appliances used during cleaning should not disperse dust to minimize the risk of re-suspending lead and other heavy metals contained in surface dust.

Accession Number: 00001648-200509000-00360

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