

BLOOD LEAD LEVELS IN NEWBORNS AND SCHOOL CHILDREN IN COLOMBO.

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Abstract

Countries around the world including Sri Lanka have removed lead in petrol. The primary reason for this is its ill effects on children even at low levels of exposure. We report on blood lead levels of children and newborns, assayed one year after changing to unleaded petrol and discuss the possible reasons for our findings.

Forty apparently healthy children living near Borella junction were investigated for the presence of lead in venous blood in 1998 and Children from the same location and of the same age and sex structures and socio – economic backgrounds were similarly investigated in 2003 one year after introduction of unleaded petrol. The results were compared and a statistically significant decline was found. The percentage with levels above 10mg/dl had dropped from 6% to 0%.

Venous and umbilical cord blood samples of 24 mothers and babies randomly selected from hospitals serving a homogenous lower socio– economic urban population in Colombo (Municipal Maternity Homes and the De Soysa Hospital for Women in Colombo) were collected into lead – free containers at delivery and assayed for the presence of lead in 2003. The levels in mothers and babies were compared.

Only one mother had no lead in her blood. Her baby had no lead either. Seventeen of the 24 newborns were found to have assayable quantities of lead in their blood stream.(Table 2)

Lead has a half-life of 25-50 days in blood stream and soft tissue; but a much longer half life in trabecular bone (3 years) and in cortical bone (30 years). These deep and long lasting reservoirs in bone are an

endogenous source. During pregnancy demineralisation of the maternal skeleton takes place releasing lead into the blood stream resulting in contamination of newborns. Although the problem of lead in children has been significantly reduced these deep long lasting reservoirs in bone are a source of lead to newborns.