

Maternal-infant Child Health and Environment Research Symposium:  
“How Local Research can Influence Policy and Practice”

Thursday, February 26<sup>th</sup>, 2009, 08:00-17:00 hrs  
Maple Leaf Room, Lister Conference Centre, University of Alberta

---

Presenter: *Brenda G. Clark, MD, FRCPC*

Presentation Summary: *“Is Lead a Concern in Canadian Autistic Children?”*

**Background:** Lead is a known environmental toxin that affects the nervous system. A safe blood level for children has been given by the Centre for Disease control (CDC) as < 0.5 umol/L. New research suggests there is a “concern” at levels > 0.1 umol/L. Behavioral effects have been documented even at very low levels of lead and recent studies have confirmed that there does not seem to be a threshold for the effects of lead on the developing child with impacts on IQ, learning, attention, hyperactivity and antisocial behavior. There are no Canadian programs that look at blood lead levels in children but the US surveillance studies have shown a decline over the years mainly due to the attempts to reduce lead in the environment. Certain groups remain at risk and have been identified as those of non-Hispanic black race, families with lower income and those living in older housing built before 1946. Further studies have shown that children with developmental disorders are at risk. Very little research has been done on the prevalence of blood lead in these “at risk” developmentally delayed groups.

**Objective:** To compare the blood lead levels in a sample of autistic children living in Northern Alberta with standards provided by the CDC guidelines.

**Methods:** Children with a diagnosis of Autism were recruited from the Preschool Assessment Service and Autism follow-up clinics at the Glenrose Rehabilitation Hospital in Edmonton that serves Northern Alberta. A CBC & differential, Ferritin and blood lead were requested after consent was obtained.

**Results:** Do any of the children have levels exceeding the current limits set by the CDC related to blood lead? Is there a relationship to behaviors? The results are pending.

**Conclusion:** Clinicians need to be aware of health impacts of lead at levels below current regulatory standards and be prepared to identify those at risk and assess for sources of exposure. They may be more likely to investigate low levels if regulatory standards are aligned with scientific knowledge of harmful effects. Broader based Canadian screening studies on the prevalence of lead and other toxins in children is necessary to provide primary care workers with much needed information on the groups within our population that are at higher risk for toxin exposures.