

Recommendations for Possible Interventions

The following information is from the *Educational Interventions for Children Affected by Lead*, an April 2015 report released by the Centers for Disease Control and Prevention (CDC).

The CDC panel conducted an exhaustive international search for research showing successful interventions in improving the reading and math abilities for children with high blood lead levels (HBLL). No research currently exists that has tried any interventions for improving the brain deficits that lead poisoning has caused on children. The panel made a strong statement for the need for immediate research in this area.

However, there is hope for immediate interventions for lead poisoned children. In the field of child development and special education, there is research that demonstrates the success of interventions related to reading, math, and cognitive improvement that have helped children with similar brain trauma that occurred from a non-lead source. The CDC panel recommended implementing these four interventions and documenting their success, or lack of success, on lead poisoned children.

1. Research shows that a **positive home environment**, as measured by standard assessment tests), has a positive impact on elevated blood lead levels (EBLL) children. Thus, an attentive home environment can lessen the effects of lead and improve educational outcomes (Moodie et al. 2013). Referring families with lead poisoned children to family visiting programs, parenting classes and other programs that are successful in improving the home environment may be successful in ameliorating the deficits in academic performance.

2. Early interventions of **high quality pre-schools and Head Start programs** are shown to increase the potential to improve children's academic performance. Enrollment in these programs results in a higher likelihood of advancing to the next grade and passing proficiency tests. Two recent evaluations of at-scale urban prekindergarten programs in Tulsa and Boston found between a half year and a full year of additional learning in language, literacy, and math (Gormley et al. 2005). Children with disabilities have been shown to make profound progress with intensive and appropriate early childhood education services. Many of these gains are in the very areas that are the most challenging for children who have experienced lead poisoning.

3. **Tools of the Mind** is a research-based, early childhood model combining teacher professional development with a comprehensive innovative curriculum that helps young children to develop the cognitive, social-emotional, self-regulatory, and foundational academic skills they need to succeed in school and life beyond school. Parents or school district administrators should access the website for Tools and consider training their school personnel to use it.

4. **Research has shown that reading deficits in lead poisoned children are similar to those of children with dyslexia and central processing disorder.** Neuro cognitive computer based programs that target cognitive improvement are showing solid improvements in these areas. There are no studies that specifically target lead poisoned children with reading deficits and computer based improvement programs, the assumption is that if it works for kids with dyslexia and other cognitive impairments not caused by lead, then it would potentially work for lead poisoned kids. **Cog Med** is a computer based program that has been used extensively in Europe for cognitive improvement and has had very good results.

CLEARCorps did a thorough review of existing interventions that have been proven to be successful in improving reading abilities.

This research identified the following proven interventions:

1. **Foundations for Literacy** is a basic classroom enrichment curriculum that targets increasing vocabulary.

2. **Early Reading Intervention** is an explicit, code-based reading instruction curriculum that has proven successful.

