Fluoride Could Affect Child's Development

The tap water of 66 percent of the population of the United States and Australia, 40 percent of the population in Canada, and 10 percent of the population of the United Kingdom is treated with compounds of fluoride with the intended purpose of reducing tooth decay. Only 2 percent of the population in Mexico receives fluoridated water, but table salt in Mexico is treated with compounds of fluoride with the intended purpose of reducing tooth decay. However, intake of excessive amounts of fluoride can have negative effects on bone and teeth. According to recent studies of populations in China, exposure to high levels of fluoride may also alter brain development. Young children are the most vulnerable to the neurodevelopmental effects of excessive fluoride.

Fluoride in water associated with low IQ scores in children

The results from a 2007 study in China's Shanxi province show that excess fluoride exposure can result in lower scores in intelligence tests. A total of 524 children were examined for intellectual functioning and growth. One group of children were exposed to naturally occurring high concentrations of fluoride in well water while a control group of children were from nearby villages with low concentrations of fluoride in well water. In the group drinking high fluoride well water there were lower overall IQ scores, a greater number of lower scores, and fewer high scores. The test result differences were enough to negatively affect a child's ability to perform in school. This report corroborates the results of a 2003 study performed in Jiangsu province warning that drinking water with fluoride levels greater than 1.0 mg/L may adversely affect the development of childen's intelligence.

The levels of fluoride in well water in this study are likely well above concentrations in U.S. drinking water supplies. However, at this time the total intake of fluoride by the average child—from drinking water, soft drinks, bottled water, toothpaste, mouth rinses—is unknown. Additional studies are needed to measure overall fluoride exposure in children to prevent potential neurodevelopmental deficits, as well as fluorosis, an abnormal condition caused by excessive intake of fluorides, characterized in children by discoloration and pitting of the teeth and in adults by pathological bone changes.

Wang, SX, et al. Arsenic and Fluoride in Drinking Water: Children's IQ and Growth in Shanyin County, Shanxi Province, China. Environmental Health Perspectives. 115(4):643-7.2007.

Xiang, Q, et al. Effect of Fluoride in Drinking Water on Children's Intelligence. Fluoride 36(2):84-94. 2003.