JAMA Pediatrics Publishes Study Linking Fluoride During Pregnancy to Decreased IQ in Children

written by GEG | August 20, 2019

A new Canadian study, published in the Journal of American Medical Association Pediatrics, shows that “maternal exposure to higher levels of fluoride during pregnancy was associated with lower IQ scores in children aged 3 to 4 years. These findings indicate the possible need to reduce fluoride intake during pregnancy.” Previous research has made similar findings, but this is the first such study to evaluate the effect of fluoride on populations receiving what the US Public Health Service considers optimal levels of 0.7 milligrams of fluoride per liter of drinking water, such as in the United States and Canada.

The study noted that water fluoridation is supplied to about 66% of US residents, 38% of Canadian residents, and 3% of European residents. Fluoride crosses the placenta, and accumulates in brain regions involved in learning and memory. The researchers found that for every 1 mg/L average increase in fluoride intake by a mother, there was a 3.7-point drop in the child’s IQ.

Water fluoridation has been hailed by the US Centers for Disease Control and Prevention as one of the top great public health achievements of the 20th century, but a new study raises questions about its role as a potential neurotoxin in utero.

The study, published in the journal JAMA Pediatrics on Monday, found that increased levels of fluoride exposure during pregnancy were associated with declines in IQ in children. Previous research has made similar findings, but this is the first such study to evaluate the effect of fluoride on populations receiving what the US Public Health Service considers optimal levels of 0.7 milligrams of fluoride per liter of drinking water, such as in the United States and Canada.

The authors of the new study assessed 601 Canadian mother and child pairs, tracking the fluoride exposure of 512 of the mothers by looking at the average concentration of fluoride in urine samples taken throughout their pregnancies as a proxy for prenatal fluoride exposure. The authors also estimated the mothers' daily fluoride intake by surveying their beverage intake, including tap water.

Between the ages of 3 and 4, all children born from the studied mothers were tested for IQ.

The authors found that for each additional 1 milligram per liter in concentration of fluoride in a mother's urine, there was a 4.5-point drop in IQ in males. The study did not find such a significant association in female children, nor did it examine why boys were more significantly affected.

The researchers say that further investigation into whether boys are more vulnerable to fluoride neurotoxicity is needed, especially considering that boys have a higher prevalence of neurodevelopmental disorders such as autism and attention-deficit disorder.

The researchers also measured the fluoride intake in 400 of the mothers against their children's IQ scores. They say this measure might reflect postnatal exposure to fluoride because a child is probably ingesting the same type of water as the mother did during pregnancy.

The authors believe that urine concentration better reflects prenatal exposure. They found that for every 1 mg/L average increase in fluoride intake by a mother, there was a 3.7-point drop in the child's IQ, regardless of gender.

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