

## CHILDHOOD AUTISM, ADHD, AND MERCURY EXPOSURES: A META-ANALYSIS

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Although a number of epidemiologic studies have been conducted to clarify the associations between mercury exposures during embryo or early infancy and later incidences of autism spectrum disorders (ASD) or attention-deficit hyperactivity disorder (ADHD), the conclusion still remains unclear. Those mercury exposure sources could be roughly divided into two patterns; i.e., vaccines thimerosal that contains ethylmercury and other environmental sources. Meta-analyses using those relevant publications revealed that those environmental mercury exposures during embryo or early infancy were not significantly associated with an increased risk of ASD or ADHD (the summary odds ratio (OR) 1.03, 95%CI 0.84-1.27 for ASD by thimerosal exposures, OR 1.03, 95%CI 0.87-1.20 for ADHD/ADD by thimerosal exposures, and OR 1.02, 95%CI 0.75-1.39 for ASD by other environmental exposures). However, given that some epidemiologic studies have reported adverse effects of mercury compounds on childhood neurodevelopmental functions, such as intelligence quotient (IQ), it might be more appropriate to evaluate ASD or ADHD as continuous variable rather than categorical classification defined by diagnostic criteria, which might lead to detect subtle effects of such mercury compounds on deterioration of ASD or ADHD estimated as 'spectrum' disorders.