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The link between oral contraceptive use and prevalence in autism spectrum disorder

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It is now estimated that 1 in 68 children are diagnosed with ASD in the United States. So far, no definitive cause or contributing factors have been established to account for the increase in prevalence in ASD. Combined oral contraceptive (COC) use is one possible risk factor for the increase in prevalence that has been overlooked in the existing biomedical and epidemiologic literature. One of the compounds found in combined oral contraceptives (COCs) is the synthetic estrogen Ethinylestradiol (EE2). EE2 is a known endocrine disrupting compound (EDC) capable of causing harmful effects to the endocrine system and to progeny. Since COCs were developed to mimic natural human hormones and disrupt endogenous endocrine function to prevent pregnancy, there is reason for concern that the EE2 component may be associated with the adverse neurodevelopmental effects that lead to the increase in ASDs. This hypothesis is compelling due to several considerations. As the prevalence of COC use has risen over the last fifty years so has the prevalence of ASDs. As a category of agents there are specific documented mechanisms through which COCs can affect the oocyte and/or developing embryo. As COCs are taken deliberately, exposure occurs at pharmacologically effective concentrations. The possibility exists that the effects of COC use could intensify over generations due to transgenerational transmission of altered epigenetic programming, with continued exposure across generations imparting sensitivity to developing ASDs. Lastly, the specific demographic at risk, women who are likely to have children, is the exact demographic that is taking COCs.

Biography

Kim Strifert was previously employed as a healthcare administrator at the Mayo Clinic, the Department of Obstetrics and Gynecology and the Office of Academic Analytic Support at Baylor College of Medicine. She is currently affiliated with the Graduate School, School of Public Health, at the University of Alabama at Birmingham. Her recent article, "The link between oral contraceptive use and the increase in the prevalence of autism spectrum disorder" is available through the *Elsevier Journal Medical Hypotheses*. The article is of significance to all women and their families as it hypothesizes that the increase in the occurrence of autism coincides with the increase in the use of hormonal contraceptives. It is important because it identifies the lack of medical research into the neurodevelopmental effects of oral contraceptive use on offspring and calls for further research.

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