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## **New Studies Suggest Prenatal Marijuana Exposure May Be Capable of Inducing FASD-Like Impairment**

### ***Special Teratology Society Journal Issue Provides New Insight Surrounding Fetal Alcohol Spectrum Disorders***

RESTON, VIRGINIA—Whether alone or combined with alcohol, new studies included in *Birth Defects Research* just published by the Teratology Society with [John Wiley & Sons](#), suggest marijuana exposure may be capable of triggering morphological and behavioral impairments similar to those seen with Fetal Alcohol Spectrum Disorders (FASD). The groundbreaking insight is part of a special journal issue of 13-studies looking closer at the biomarkers, mechanisms, and interactions of prenatal alcohol exposure. (See the [Overview](#) DOI:10.1002/bdr2.1545).

“It’s incredibly timely and relevant that we address the subject of prenatal alcohol exposure,” said Christina Chambers, PhD, MPH, professor of pediatrics at the University of California, San Diego and co-editor of the special *Birth Defects Research* issue. Dr. Chambers, a Teratology Society Past President and pioneer in the field of prenatal alcohol research, recently made headlines with her groundbreaking [study](#) which suggests FASD may affect up to 5% of children in the U.S., and is far more common than previously thought. “Alcohol is likely the most common teratogenic exposure that occurs in pregnancy.”

Some of the significant findings unveiled in the new issue include those by [Boa-Amponsem et al.](#) The authors use a zebrafish model to examine the effects of a cannabinoid agonist as well as alcohol on FASD phenotypes, changes to physical features, and behavior and showed that cannabinoids alone, as well as if combined with lower levels of alcohol, significantly impaired development. “This study, in combination with previous work in [mice](#), suggests that prenatal cannabis exposure might induce FASD-like impairments,” said Scott E. Parnell, PhD, assistant professor in the Bowles Center for Alcohol Studies at the University of North Carolina School of Medicine and co-editor of the special *Birth Defects Research* issue. In addition, a study by [Buckley et al.](#) provides the first known report of hindbrain-associated heterotopias (brain tissue located in the wrong part of the brain) resulting from developmental alcohol exposure. This novel finding further details evidence that the effects of exposure are timing- and dose-dependent.

Long-term prenatal alcohol exposure effects are also addressed providing striking new evidence indicating adolescents with FASD, particularly males, are 29% more likely to report a serious suicide attempt. "This work by [O'Connor et al.](#) suggests that health care providers should be aware of this specific vulnerability in adolescents with FASD, especially among males," said Dr. Chambers.

The 13 studies making up the special issue include:

- ["Gestational Age and Socioeconomic Status as Mediators for the Impact of Prenatal Alcohol Exposure on Development at Six Months"](#) by Coles et al. (DOI: 10.1002/bdr2.1408).
- ["Ethanol and cannabinoids interact to alter behavior in a zebrafish FASD model"](#) by Boamponsem et al. (DOI: 10.1002/bdr2.1458).
- ["Differential neuroimaging indices in prefrontal white matter in prenatal alcohol-associated ADHD versus idiopathic ADHD"](#) by O'Neill, et al. (DOI: 10.1002/bdr2.1460).
- ["Relation Between Adaptive Function and IQ Among Youth with Histories of Heavy Prenatal Alcohol Exposure"](#) by Doyle et al. (DOI: 10.1002/bdr2.1463).
- ["Characterizing Adverse Prenatal and Postnatal Experiences in Children"](#) by Lebel et al. (DOI: 10.1002/bdr2.1464).
- ["Suicide Risk in Adolescents with Fetal Alcohol Spectrum Disorders"](#) by O'Connor et al. (DOI: 10.1002/bdr2.1465).
- ["Differentially sensitive neuronal subpopulations in the central nervous system and the formation of hindbrain heterotopias in ethanol exposed Zebrafish"](#) by Buckley et al. (DOI: 10.1002/bdr2.1477).
- ["Exploring the Contributions and Suitability of Relational and Community-Centered Fetal Alcohol Spectrum Disorder \(FASD\) Prevention Work in First Nation Communities "](#) by Pei et al. (DOI: 10.1002/bdr2.1480).
- ["The Effects of Alcohol and Cannabinoid Exposure during the Brain Growth Spurt on Behavioral Development in Rats"](#) by Breit et al. (DOI: 10.1002/bdr2.1487).
- ["The association between prenatal alcohol exposure and protein expression in human placenta."](#) by Holbrook et al. (DOI: 10.1002/bdr2.1488).
- ["Alcohol-Mediated Calcium Signals Dysregulate Pro-Survival Snai2/PUMA/Bcl2 Networks to Promote p53-Mediated Apoptosis in Avian Neural Crest Progenitors "](#) by Flentke et al. (DOI: 10.1002/bdr2.1508).
- ["Oxidative stress and DNA damage in the mechanism of fetal alcohol spectrum disorders"](#) by Bhatia et al. (DOI: 10.1002/bdr2.1509).
- ["Fetal Alcohol Spectrum Disorder Prevention Program: SBIRT's role in averting Fetal Alcohol Spectrum Disorders"](#) by Manriquez, et al. (DOI: 10.1002/bdr2.1516).

### **About the Teratology Society**

[The Teratology Society](#) is an international and multidisciplinary group of scientists including researchers, clinicians, epidemiologists, and public health professionals from academia, government and industry who study birth defects, reproduction, and disorders of developmental origin. The Teratology Society is made up of nearly 700 members worldwide specializing in a variety of disciplines, including developmental biology and toxicology, reproduction and endocrinology, epidemiology, cell and molecular biology, nutritional biochemistry, and genetics as well as the clinical disciplines of prenatal medicine, pediatrics, obstetrics, neonatology, medical genetics, and teratogen risk counseling. Scientists interested in membership in the Teratology Society are encouraged to visit [www.teratology.org](http://www.teratology.org).

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