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Symposium, Series of New Studies Aim to Raise Awareness of Drug Abuse in Pregnancy

1 in 4 Pregnant Women Entering Rehab Cite 'Meth' as Drug of Abuse

SAN ANTONIO, TEXAS— One in four pregnant women entering treatment in the United States identifies methamphetamine as their primary drug of abuse and 42% of pregnant women using methamphetamine continue to use it throughout pregnancy, according to a series of new research articles published today in [Birth Defects Research Part C: Embryo Today](#). Study authors will present their research during a [symposium](#) June 27 at the concurrent annual meetings of the Teratology Society and Developmental Neurotoxicology Society, an international gathering of birth defects researchers and developmental neurotoxicologists wrapping up this week at the Grand Hyatt San Antonio.

“From nicotine use to meth, substance abuse during pregnancy continues to be a problem and much needed area for additional research on the effects it’s having on developing babies,” said Rocky Tuan, PhD, editor of the special issue on “Prenatal Substance Abuse and Developmental Disorders” in *Birth Defects Research Part C: Embryo Today* (see the Overview, doi: 10.1002/bdrc.21133), which highlights the latest, cutting-edge science on methamphetamine, alcohol, nicotine and cocaine exposure during pregnancy and their effects on fetal and neurobehavioral development. “One of the studies, authored by Bradley Holbrook, MD, of the University of New Mexico, focuses particularly on nicotine exposure to a fetus. It’s a critical topic that continues to be an area of concern for prenatal health, especially as we see a rise in products containing nicotine labeled ‘safer’ than traditional smoking, such as e-cigarettes,” he added.

Another paper in this special issue focuses on how methamphetamine affects offspring after exposure late in pregnancy. “Areas of the brain that control higher cognitive function such as learning and memory are more sensitive to disruption during the third trimester of pregnancy,” explained Charles V. Vorhees, PhD, of the Cincinnati Children’s Research Foundation and University of Cincinnati. His team’s research on the “effects of methamphetamine on brain and behavioral development,” showed that third trimester-equivalent methamphetamine exposure affects dopamine, dopamine D1 and D2 receptors, and enzyme activity in the striatal region of the fetal brain. “Our findings suggest that long-term changes to dopamine receptors appear to be connected to the long-term learning and memory impairments found in offspring after exposure to methamphetamine, but these receptors are not the whole story as we have new evidence indicating the involvement of other biochemical pathways that are involved in the drug’s effects on fetal brain development and later behavior.”

Additionally, a study included in the collection authored by Lynne Smith, MD, of Harbor-UCLA Medical Center takes the research beyond pregnancy, examining the longer-term neurobehavioral effects of prenatal exposure to methamphetamine and cocaine. “Interestingly, there is suggestion that providing a

supportive home environment may reduce the severity and risk of behavioral issues in exposed children,” said Tuan. “This is huge and provides hope, particularly for families considering adoption of a stimulant-exposed child.”

With the increasing societal prevalence of substance abuse, prenatal exposure has emerged as a critical health challenge that has long term, and potentially irreversible, harmful effects on the newborn and to the developing child, that may last to adulthood, with large societal costs. It is hoped that research activities focusing on deeper understanding of the nature of the harmful effects, as highlighted in the Symposium and the journal issue, will elevate public awareness and the urgency on the part of both the physician and the patient to work towards reducing substance abuse, and identify targets for the development of therapeutic agents to treat the primary and associated symptoms to improve outcomes of the pregnancy and the lifelong health of the exposed child.

About the Teratology Society

[The Teratology Society](#), an international professional group of scientists hailed as the premier source for cutting-edge research and authoritative information related to birth defects and developmentally-mediated disorders, publishes *Birth Defects Research* with John Wiley & Sons.

The Teratology Society is made up of more than 700 members worldwide specializing in a variety of disciplines related to birth defects research, 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.

More information on all research presented at the annual meeting may be found on [the 56th Annual Meeting website](#).

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