

Researcher examines the risks of early methadone exposure

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(Medical Xpress)—Longitudinal studies of children exposed to methadone in the womb need to accompany methadone maintenance treatment for drug-addicted pregnant mothers, according to a research team led by a University of Maine doctoral student in psychology.

While methadone maintenance treatment "is associated with increased stability in maternal and [infant health](#), when compared with illicit opiate use," long-term effects of prenatal methadone exposure on fetal and infant development are not well known, says Beth Logan, a doctoral student in developmental-[clinical psychology](#) at UMaine.

Logan conducted the research in collaboration with Dr. Mark Brown, a [neonatologist](#) at Eastern Maine Medical Center in Bangor, Maine, and

Marie Hayes, a UMaine professor of psychology, cooperating professor of the Graduate School of Biomedical Science and allied scientist at EMMC.

The issue of methadone [maintenance therapy](#) during pregnancy is important locally, Logan says, as prescription opiate abuse in rural Maine has reached [epidemic proportions](#).

It's well documented that methadone causes neonatal abstinence syndrome (NAS) in some newborns. NAS can result in [gastrointestinal symptoms](#) such as vomiting and diarrhea, as well as slow feeding and growth and, in more severe cases, seizures.

Breastfeeding, Logan says, has been shown in this and other studies to reduce the severity of NAS in opiate-exposed infants.

To better understand long-term implications of prenatal methadone exposure on infant and toddler development, Logan and the UMaine team are conducting a longitudinal study of 200 methadone-exposed and nonexposed demographically matched families.

According to Logan's dissertation research, at 9 months of age, 37.5 percent of the methadone-exposed infants demonstrated clinically significant motor delays compared with typical development in the nonexposed group. Motor deficits, she says, were particularly prominent in the milestones of sitting independently and crawling.

Maternal alcohol and tobacco use also affect cognitive and motor development of infants, Logan says, and should be considered when evaluating treatment possibilities. Logan also found that electroencephalogram (a test that measures electrical brain activity) markers of learning deficits are associated with comorbid (a medical condition that exists simultaneously and generally independently of

another condition) prenatal alcohol exposure in methadone-exposed infants.

In addition, Logan says it appears environmental risks "conspire with" prenatal exposures to pose immediate and long-term developmental implications.

The findings were published in the March 2013 issue of *Clinical Obstetrics and Gynecology*.

Provided by University of Maine

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