Babies of overweight mothers may risk developing self-regulation problems

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A mother's weight during early pregnancy may affect how well her baby is able to self-regulate during its first months and years of life. This is according to a study of more than 3100 Finnish women in the journal *Pediatric Research*, which is published by Springer Nature. According to lead author Polina Girchenko of the University of Helsinki in Finland, there is a one in five chance that overweight or obese women will have babies who suffer from multiple regulatory problems, and these babies may also show a delay in some developmental milestones when they reach childhood.

Previous research has found that one in every five infants struggles to self-regulate in the first year of life. This means that these babies may cry excessively, have problems feeding or difficulties falling asleep unless soothed by a caregiver. As they grow older, such children often show behavioural and neurodevelopmental problems such as hyperactivity or difficulties concentrating, as well as having poorer muscle function. Some have lower IQs or are placed on the autism spectrum.

The aim of this study was to find out whether a mother's weight during early pregnancy influences her child's neurodevelopment. Girchenko and her colleagues drew on data from 3117 women from different Finnish towns who had given birth between 2006 and 2010. All participants were part of the Prediction and Prevention of Pre-eclampsia and Intrauterine Growth Restriction (PREDO) study.

Medical data was gathered about the mothers' weight during the first few months of their pregnancies, and whether they suffered from high blood pressure or gestational diabetes during this period. Up to three months after delivery, the women then answered questions about their babies' ability to regulate and calm themselves. Follow-up assessments of the children's developmental milestones were conducted between 2011 and 2012.

In general, the participants who were overweight or obese tended to be older mothers and to deliver their babies through a caesarean section. They were also less likely to have a tertiary education and quite often decided to stop smoking when they first heard that they were pregnant.

By the age of 17 days, infants of mothers who were overweight were already found to struggle more often with regulatory behaviour problems. In fact, there was a 22 per cent higher chance that overweight or obese mothers would have children with multiple self-regulatory problems. The research team confirmed that weight was the significant factor, and not whether a mother suffered from high blood pressure or gestational diabetes.

"Our findings show that regulatory behavior problems in infancy have prenatal origins that can be attributed at least partially to mothers being

overweight or obesity," explains Girchenko. "We suggest that the prevention of weight problems in women of childbearing age may benefit their later offspring and could reduce the burden of regulatory problems in infancy and prevent their long-term neurodevelopmental consequences."

More information: Polina Girchenko et al, Neonatal regulatory behavior problems are predicted by maternal early pregnancy overweight and obesity: findings from the prospective PREDO Study, *Pediatric Research* (2018). DOI: 10.1038/s41390-018-0199-1