

Study finds association between mother's larger waist size, child's autism risk

March 19 2018

A new study finds children born to mothers who had a larger waist size before pregnancy may be more likely to have autism than those whose mothers had a smaller pre-pregnancy waist. The research results will be presented Monday, March 19, at ENDO 2018, the 100th annual meeting of the Endocrine Society in Chicago, Ill.

"Children born to mothers with a waist of 80 centimeters (31 ¹/₂ inches) or more before pregnancy showed a 65 percent increase in the risk of <u>autism</u> than those born to a mother with a smaller waist," said lead author Geum Joon Cho, M.D., Ph.D., visiting scholar in the Department of Obstetrics and Gynecology at the Feinberg School of Medicine, Northwestern University in Chicago, Ill., and associate professor in the Department of Obstetrics and Gynecology, Korea University College of Medicine, Seoul, Republic of Korea.

"It is assumed there are multiple factors that cause autism, both inherited and environmental," Cho said. "Of the <u>environmental risk factors</u>, emerging evidence has linked maternal pre-pregnancy obesity to the risk of autism in offspring. However, other studies have reported no associations between the two conditions. We wanted to investigate this association further."

Previous studies that investigated the association between a mother's obesity and her child's autism used body mass index (BMI) as an indication of body fat mass, Cho said. "However, BMI is based on weight and does not differentiate between <u>fat mass</u> and lean mass," he



said. Waist circumference is the best way to measure visceral fat—body fat that is stored within the abdominal cavity and is therefore stored around a number of important internal organs such as the liver, pancreas and intestines.

The researchers reviewed data for 36,451 mothers who delivered a single live infant between 2007 and 2008 and underwent a National Health Screening Examination within one year of their pregnancy. The babies were followed up through 2015 to see if they developed autism. The researchers found 265 (0.76%) in the study had been diagnosed with autism spectrum disorder.

While maternal obesity, as defined by a <u>waist circumference</u> of 80 centimeters or more, increased the odds of autism by 65 percent, obesity defined by BMI alone was not associated with an increased risk of autism.

Cho said inflammation may play a key role in the link between obesity and autism. "Both intrauterine inflammation and fetal brain inflammation are implicated in the development of autism," Cho said. "As obesity increases, circulating immune system proteins called inflammatory cytokines in pregnant women and the inflammation associated with maternal obesity may be related to the development of autism. Waist circumference, as a measure of central <u>obesity</u>, is associated with an increase in inflammatory cytokines, which is known to be involved in the development of autism."

"The findings suggest the need for clinicians to monitor for <u>maternal</u> <u>obesity</u>, based on waist circumference, to minimize the risk of development of <u>autism spectrum disorder</u> in offspring," Cho said. "Further studies are needed to evaluate whether altering maternal waist circumference would lessen the risk of the development of autism in offspring."



Provided by The Endocrine Society

Citation: Study finds association between mother's larger waist size, child's autism risk (2018, March 19) retrieved 5 May 2024 from <u>https://medicalxpress.com/news/2018-03-association-mother-larger-waist-size.html</u>

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