

Maternal obesity prior to pregnancy associated with birth defects

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Mothers of babies born with some structural birth defects—including missing limbs, malformed hearts and underdeveloped spinal cords—appear more likely to be obese prior to becoming pregnant than mothers whose children are born without such defects, according to a report in the August issue of *Archives of Pediatrics & Adolescent Medicine*, one of the JAMA/Archives journals.

Overweight and obese women are known to be at risk for chronic diseases, infertility, irregular menstruation and complications during pregnancy, according to background information in the article. In 2003 and 2004, about 51 percent of women aged 20 to 39 were classified as overweight or obese.

D. Kim Waller, Ph.D., of the University of Texas, Houston, and colleagues interviewed 10,249 women in eight states whose babies were born with birth defects between 1997 and 2002. The women were contacted between six weeks and 24 months after the baby's birth and asked for their height and weight before pregnancy, along with other demographic and medical information. These women were compared with 4,065 women who had babies without birth defects during the same time period.

Mothers of babies with the following seven of 16 birth defects were more likely to be obese than mothers of infants without birth defects:

Mothers of babies with gastroschisis, which is similar to omphalocele but involves organs protruding through a defect in the abdominal wall that is not the navel, were significantly less likely to be obese than mothers of babies without birth defects.

"The reasons for an association between maternal obesity and a spectrum of structural birth defects are unknown," the authors write. "Both animal studies and human studies provide substantial

evidence that alterations in glycemic control are responsible for an increased risk of a range of structural birth defects among women who have diabetes prior to becoming pregnant. Thus, a similar mechanism to that occurring in women with diabetes may be responsible for the associations observed between maternal obesity and specific categories of birth defects." Women with type 2 diabetes were excluded from the study, and when the analysis was performed also excluding women with gestational diabetes, the results were similar. However, undiagnosed cases of type 2 or gestational diabetes may have affected the results.

"Our study supports previous evidence as well as provides new evidence for the associations between maternal obesity and particular categories of birth defects," the authors conclude. "Future inquiries are needed to unravel the underlying reasons for these associations."

Source: JAMA and Archives Journals

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