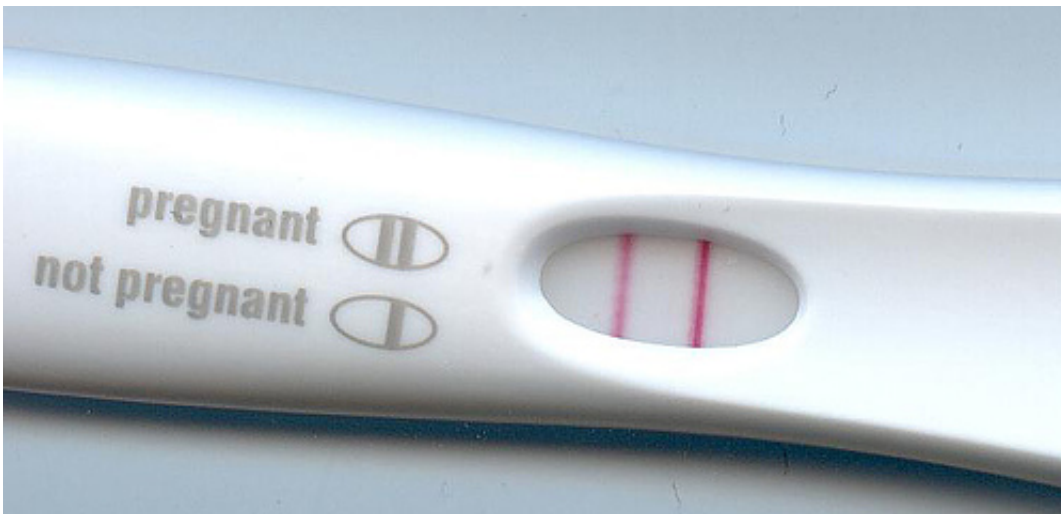


Obesity during pregnancy may lead directly to fetal overgrowth, study suggests

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Pregnancy test. Credit: public domain

Obesity during pregnancy—independent of its health consequences such as diabetes—may account for the higher risk of giving birth to an atypically large infant, according to researchers at the National Institutes of Health. Their study appears in *JAMA Pediatrics*.

"Our results underscore the importance of attaining a healthy body weight before [pregnancy](#)," said the study's lead author, Cuilin Zhang, M.D., Ph.D., a researcher in the Division of Intramural Population Health Research at NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development. "They also suggest that

clinicians should carefully monitor the pregnancies of all obese women, regardless of whether or not they have obesity-related health conditions."

Macrosomia—large body size at birth—is common among children born to obese women, particularly those who have gestational diabetes (high [blood sugar](#) during pregnancy). Macrosomia increases the risk that an infant will experience bone fracture during delivery. It also increases the likelihood that the infant will need to be delivered by cesarean section. Having a large infant also increases a mother's risk for postpartum hemorrhage, or excessive bleeding at birth.

In the current study, researchers analyzed [ultrasound scans](#) taken throughout pregnancy of more than 2,800 pregnant women: 443 obese women with no accompanying health conditions, such as diabetes, and more than 2300 non-obese women. The researchers categorized the women's weight according to their body mass index (BMI) score. Women with a BMI ranging from 30 to 44.9 were classified as obese, while those with a BMI of 29.9 were considered non-obese.

Beginning in the 21st week of pregnancy, ultrasound scans revealed that for [fetuses](#) of obese women, the femur (thigh bone) and humerus (upper arm bone) were longer than those of the fetuses of non-obese women. The differences between fetuses of obese and non-obese women continued through the 38th week of pregnancy. For fetuses in the obese group, the average femur length was 0.8 millimeters longer (about 0.03 inches), compared to the non-obese group, and humerus length was about 1.1 millimeters longer (about 0.04 inches), compared to the non-obese group. Average birth weight was about 100 grams (about 0.2 pounds) heavier in the obese group. Moreover, [infants](#) born to obese women were more likely to be classified as large for gestational age (birth weight above the 90th percentile), compared to infants born to non-obese women.

The study could not determine exactly why the fetuses of obese women were larger and heavier than fetuses in the non-obese group. The researchers theorize that because obese women are more likely to have insulin resistance (difficulty using insulin to lower blood sugar), higher blood sugar levels could have promoted overgrowth in their fetuses.

The authors pointed out that earlier studies have indicated that the higher risk of overgrowth seen in newborns of obese [women](#) may predispose these infants to obesity and cardiovascular disease later in life. They called for additional studies to follow the children born to [obese women](#) to determine what health issues they may face.

More information: Zhang C, et al. Maternal obesity and longitudinal ultrasonographic measures of fetal growth: findings from the NICHD fetal growth studies—singletons. *JAMA Pediatrics* 2017

Provided by NIH/Eunice Kennedy Shriver National Institute of Child Health and Human Development

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