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Severely obese women may need to gain less weight during pregnancy

Recently revised recommendations may be high for most obese

Extremely obese women may not need to gain as much weight during pregnancy as current guidelines suggest, according to a new study presented today at the Society for Maternal-Fetal Medicine annual meeting.

Severely obese women who gained less than the recommended amount of weight during the second and third trimester of pregnancy suffered no ill effects, nor did their babies. In contrast, obese and non-obese women who gained less weight in the second and third trimester had undesirable outcomes, including a higher likelihood of delivering a baby that is small for gestational age – smaller than the usual weight for the number of weeks of pregnancy.

"The study suggests that even the recommended amounts of weight gain might be more than is needed for the most obese women," said Eva Pressman, M.D., director of Maternal Fetal Medicine at the University of Rochester Medical Center.

In 2009, the Institute of Medicine released new guidelines for how much weight a woman should gain during pregnancy, taking into account changes in the population, particularly the increase in the number of women of childbearing age who are overweight and obese.

"At some point, there may be even more tailored guidelines than what exists right now for women with different levels of obesity," said Danielle Durie, M.D., M.P.H, lead study author from the Department of Obstetrics and Gynecology at the Medical Center.

The study sought to determine the impact of weight gain outside recommended ranges during the second and third trimester of pregnancy on women and their babies. Women were grouped according to

pre-pregnancy body mass index (BMI) as underweight, normal weight, overweight, and obese classes I, II, and III. Obese classes II and III include women considered severely and morbidly obese.

Gaining less weight than recommended in the second and third trimester was associated with increased likelihood of having a baby that is small for gestational age in all BMI groups except obese class II and III. Gaining more weight than recommended in the second and third trimester was associated with increased likelihood of having a baby that is large for gestational age in all BMI groups.

Newborns that are very large or very small may experience problems during delivery and afterwards. Small babies may have decreased oxygen levels, low blood sugar and difficulty maintaining a normal body temperature. Large babies often make delivery more difficult and may result in the need for a cesarean delivery, which increases the risk of infection, respiratory complications, the need for additional surgeries and results in longer recovery times for the mother.

In addition to weight gain rates outside the recommended ranges, increasing BMI alone was associated with negative outcomes for mothers and newborns as well. For all BMI groups above normal weight, the likelihood of cesarean delivery, induction of labor and gestational diabetes increased.

The study included 73,977 women who gave birth to a single child in the Finger Lakes Region of New York between January 2004 and December 2008. Of the study participants, 4 percent were underweight, 48 percent normal weight, 24 percent overweight and 24 percent obese (13 percent class I, 6 percent class II and 5 percent class III).

Researchers from Rochester also reported that overweight and obese women undergoing labor induction may benefit from higher doses of oxytocin, a medication used to induce labor by causing contractions. They tested the effectiveness of two oxytocin protocols – one including a lower dose every 45 minutes and another using a slightly higher dose every half hour – in women based on BMI.

Overweight and obese women administered the lower, less frequent dose were less likely to deliver vaginally – the preferred method of delivery – than overweight and obese women administered the higher, more frequent dose.

"If you give more oxytocin to overweight and obese patients they may be more likely to delivery vaginally, which is what we want, as opposed to having a cesarean section, which can introduce more complications," according to Pressman, an author of the study. "The study is important because the effect of BMI on induction has not been well described before."

The oxytocin protocols tested in the study are relatively standard and were used to induce labor in nearly 500 women who delivered at the University of Rochester Medical Center between October 2007 and September 2008. Study participants were induced for a variety of reasons, including going a week or

more past the estimated due date, when there is no longer any benefit to the fetus from remaining inside the womb.

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In addition to Pressman and Durie, David Hackney, M.D., and Nigel Campbell, M.D., also participated in the oxytocin research. Christopher Glantz, M.D., M.P.H, and Lorelei Thornburg, M.D., contributed to the research on weight gain during the second and third trimester of pregnancy. Both studies were funded by the University of Rochester Medical Center.

