

Obesity increases the risk of preterm delivery

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The risk of preterm delivery increases with maternal overweight and obesity, according to a new Swedish study published in *Journal of the American Medical Association (JAMA)*. Women with the highest Body Mass Index (BMI) also had the highest statistical risk of giving preterm birth – and especially extremely preterm birth.

"For the individual woman who is overweight or obese, the risk of an extremely [preterm delivery](#) is still small", says Dr. Sven Cnattingius, Professor at Karolinska Institutet in Sweden, who led the study.

"However, these findings are important from a population perspective. Preterm infants and, above all, extremely preterm infants account for a substantial fraction of infant mortality and morbidity in high income countries."

In the *JAMA* study, Dr. Cnattingius and colleagues at Karolinska Institutet and the University of Michigan, U.S., used information from 1.5 million singleton deliveries included in the population-based Swedish Medical Birth Register from 1992 through 2010. Information about maternal weight at first visit to prenatal care and height was used to calculate [women's](#) BMI, defined as weight in kilograms divided by height in square meters. A BMI between 18.5 and 24.9 was assessed as normal, 25 to 29.9 as overweight, and a BMI of 30 or more as [obesity](#). Among young Swedish women of normal length (167 cm), a weight from 70 to 83 kilograms is considered overweight and more than 83 kilograms is considered obesity.

Compared to women of normal weight, [overweight women](#) had a 25

percent increased risk of extremely preterm delivery. Women with mild obesity had a 60 percent increased risk of giving birth extremely preterm. For women with severe obesity (BMI 35-39.9) or extreme obesity (BMI 40 or more) the corresponding risk was doubled and tripled, respectively. Risks of very and moderately preterm deliveries also increased with BMI.

"34 percent of all pregnant women in Sweden are either overweight or obese, and this impacts the number of preterm born infants", says Dr. Cnattingius. "Overweight and obesity also increase the risk of maternal pregnancy complications, including preeclampsia, gestational diabetes, and Cesarean delivery."

In Sweden, there are annually around 100,000 childbirths. Of these children, around 250 are born extremely preterm (more than 12 weeks before expected date), 500 very preterm (8 to 12 weeks too early) and 4,500 moderately preterm (4 to 8 weeks too early).

Researchers found that the [overweight](#) and obesity related risk of medically indicated preterm delivery was substantially explained by increased risks of obesity-related diseases. Above all, the severe pregnancy complication preeclampsia justified the need of medically indicated preterm delivery due to concern of maternal and infant health. The [overweight and obesity](#) related risk of spontaneous preterm delivery was primarily confined to extremely preterm delivery.

Infection and inflammation are considered main risk factors for spontaneous extremely preterm delivery with a spontaneous onset, and maternal obesity is associated with increased production of inflammatory proteins. The researchers hypothesize that the increased inflammatory state in obese women may make them more susceptible to infections, which may increase their risk of spontaneous extremely preterm delivery.

More information: 'Maternal obesity and risk of preterm delivery', Cnattingius S, Villamor E, Johansson S, Bonamy A-K, Persson M, Wikström A-K, Granath F, JAMA, June 12 – 2013, Vol 309, No 22.

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