

Overweight and obese women at higher risk of adverse neonatal and maternal outcomes

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Overweight and obese women are more likely to require specialist medical care during their pregnancy due to the increased risk of adverse neonatal and maternal outcomes, finds a new study published today (27 March) in *BJOG: An International Journal of Obstetrics and Gynaecology*.

The study, carried out by a team from Queen's University Belfast and Belfast Health and Social Care Trust, found that maternal obesity has significant [health implications](#) contributing to increased morbidity and mortality for both mother and baby. With worldwide [obesity rates](#) having doubled over the past 30 years, the rate of obese pregnant women is also increasing.

This study categorised women according to the [World Health Organisation](#) (WHO) [body mass index](#) (BMI) classifications. The categories included women who were underweight (BMI < 18.5).

It looked at the impact of BMI on maternal and neonatal outcomes in 30,298 singleton pregnancies, from a referral unit in Northern Ireland, in the UK over an 8 year period (2004-2011). Within this cohort, 2.8% of women were categorised as underweight, 52.5% normal weight, 27.8% overweight, 11% obese class I, 3.9% obese class II and 1.9% obese class III.

Results showed that, when compared to normal weight women, women in the overweight and obese class I category had an increased risk of

hypertensive disorders, [gestational diabetes](#), induction of labour, [caesarean section](#), post-partum haemorrhage and macrosomia (large birthweight baby), with all risks significantly increasing for obese class II and III women. For example, women in obese class III were four times more likely to develop gestational diabetes compared to normal weight women.

Furthermore, women in obese class III were identified to be at the most risk of additional adverse outcomes including having a [preterm delivery](#), a newborn requiring neonatal admission, and stillbirth, which was three times more likely among these women.

In overweight and [obese women](#) there was also an increased likelihood of postnatal problems, such as unsuccessful breastfeeding, which has also shown to increase the risk for long-term health implications for both mother and baby in relation to obesity.

Conversely, underweight women were at an increased risk of anaemia and were more likely to have a low birthweight baby, when compared to normal weight women.

Dr Valerie Holmes, Centre for Public Health, Queen's University Belfast and co-author of the study, said:

"This large-scale study clearly demonstrates that being overweight or obese during pregnancy increases the risk of adverse maternal and neonatal outcomes.

"By having obesity in sub-classifications, we were able to highlight the relationship between increasing BMI and the increasing risk of adverse outcomes, with women most at risk in obese class III requiring specialist medical care during pregnancy."

Dale Spence, School of Nursing and Midwifery, Queen's University Belfast and co-author of the study, added:

"We found that the majority of overweight women fall into the overweight or obese class I categories and while they are still at an increased risk of gestational diabetes and hypertensive disorders in pregnancy, they may not be offered the same level of specialist care under current guidelines."

Mike March, *BJOG* Deputy-Editor-in-Chief, said:

"We know that maternal obesity has significant health implications including an increased risk of developing pregnancy-related disorders, poorer labour outcomes and adverse neonatal health.

"This study further shows the relationship between obesity and these adverse outcomes by linking rising BMI with the likelihood of adverse maternal and [neonatal outcomes](#) associated with pregnancy.

"Further research is needed to optimise management for overweight and obese [women](#) during pregnancy."

More information: Scott-Pillai R, Spence D, Cardwell CR, Hunter A, Holmes VA. The impact of body mass index on maternal and neonatal outcomes: A retrospective study in UK Obstetric population. *BJOG* 2013 [dx.doi.org/10.1111/1471-0528.12193](https://doi.org/10.1111/1471-0528.12193)

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