

Children of obese mothers at greater risk of early heart death as adults

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Children of obese and overweight women have a higher risk of early cardiovascular death as adults, finds a study published on *BMJ* website today.

The findings highlight the urgent need for strategies to prevent [obesity](#) in women of childbearing age and the need to assess the offspring of [obese mothers](#) for their cardiovascular risk, say the authors.

Rates of maternal obesity have risen rapidly in the past two decades. In the United States, about 64% of women of reproductive age are overweight and 35% are obese, with a similar pattern in Europe.

Many studies have shown a link between maternal obesity and disease later in life, but it is still not clear whether maternal obesity is associated with increased death in offspring from cardiovascular causes.

Using birth and death records from 1950 to the present day, a team of researchers in Scotland identified 28,540 women - whose [body mass index](#) (BMI) was recorded at their first antenatal visit - and their 37,709 offspring who were aged between 34 and 61 at the time of follow up.

BMI was defined as [underweight](#) (BMI 18.5 or less), normal weight (BMI 18.5-24.9), overweight (BMI 25-29.9), and obese (BMI 30 or more).

Relevant details about the pregnancy were collated, including the

mother's age at delivery, number of previous pregnancies, mother and father's social class and infant sex, [birth weight](#) and gestation at delivery.

Among the mothers, 21% were overweight and 4% were obese. Among the 37,709 offspring there were 6551 premature deaths from any cause and, among the deceased, 294 had had obese mothers at birth.

The researchers found that the risk of [premature death](#) was 35% higher in the adult offspring of obese mothers compared to those whose mothers had had normal weight. This was after adjusting the results for factors including the mother's age at delivery, number of previous pregnancies, mother and father's social class and infant sex, birth weight and gestation at delivery.

They also found a 42% increased risk (adjusted for the same factors) of a hospital admission for a cardiovascular event in the adult offspring of obese mothers compared with offspring of mothers with normal BMI.

The offspring of overweight mothers also had a higher risk of adverse events later in life.

It is thought that being overweight in pregnancy may cause permanent changes in appetite control and energy metabolism in the offspring, leading to a greater risk of heart problems, later in life.

With rising rates of excess weight among pregnant women, the authors say their findings are "a major public health concern" and indicate that the [offspring](#) of obese mothers are a high risk group who should be assessed for [cardiovascular risk](#), and actively encouraged to maintain a healthy lifestyle.

"As one in five women in the UK is currently obese at antenatal booking, strategies to optimise weight before pregnancy are urgently required,"

they conclude.

In an accompanying editorial, Dr Factor-Litvak from the Department of Epidemiology in New York, says that this study leaves open two questions. Firstly, what is the role of the early post natal environment and secondly, what is the role of parental obesity? She asks what the implications of the study are, concluding that along with recommended weight gain for overweight and obese women, "interventions should begin before pregnancy".

More information: Maternal obesity during pregnancy and premature mortality from cardiovascular event in adult offspring: follow-up of 1,323,275 person years, *BMJ*, 2013.

Editorial: Maternal obesity and heart disease in the offspring, *BMJ*, 2013.

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