Caesarean section delivery may double risk of childhood obesity

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Caesarean section delivery may double the risk of subsequent childhood obesity, finds research published online in the *Archives of Disease in Childhood*.

Caesarean section delivery has already been linked to an increased risk of subsequent childhood asthma and allergic rhinitis, and around one in three babies born in the US is delivered this way.

The authors base their findings on 1255 mother and child pairs, who attended eight outpatient maternity services in eastern Massachusetts, USA between 1999 and 2002.

The mums joined the study before 22 weeks of pregnancy, and their babies were measured and weighed at birth, at six months, and then at the age of three, when the child's skinfold thickness, a measure of body fat, was also assessed.

Out of the 1255 deliveries, around one in four (22.6%; 284) were by caesarean section, and the remainder (77.4%; 971) were vaginal deliveries.

Mums who delivered by c-section tended to weigh more than those delivering vaginally, and the birthweight for gestational age of their babies also tended to be higher. These mums also breastfed their babies for a shorter period.

But irrespective of birth weight, and after taking account of maternal weight (BMI) and several other influential factors, a caesarean section delivery was associated with a doubling in the odds of obesity by the time the child was 3 years old.

Just under 16% of children delivered via c-section were obese by the age of 3 compared with 7.5% of those born vaginally.

Children delivered by c-section also had higher BMI and skinfold thickness measurements by the age of 3.

The researchers speculate that one possible explanation for their findings is the difference in the composition of gut bacteria acquired at birth between the two delivery methods.

They highlight previous research showing that children born by c-section have higher numbers of Firmicutes bacteria and lower numbers of Bacteroides bacteria in their guts. These two groups make up the bulk of gut flora.

Other research has also suggested that obese people have higher levels of Firmicutes bacteria.

It may be that gut bacteria influence the development of obesity by increasing energy extracted from the diet, and by stimulating cells to boost insulin resistance, inflammation, and fat deposits, say the authors.

"An association between caesarean birth and increased risk of childhood obesity would provide an important rationale to avoid non-medically indicated caesarean section," write the authors.

Mums who choose this delivery option should be made aware of the potential health risks to her baby, including the possibility of obesity,

they say.

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