

Preterm delivery by cesarean section is a growing tendency in Brazil and entails risks for babies, study shows

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Brazilian researchers have investigated the effects of delivery date manipulation to avoid the Carnival holiday. Their findings suggest that

Brazilian women are giving birth too early, impairing the health of their babies.

The evidence shows that many [cesarean sections](#) scheduled to take place during the Carnival holiday in Brazil are moved up or postponed. Researchers at INSPER, a private higher education and [research institution](#) in São Paulo city, investigated the effects of this manipulation of birth timing on infant health. Their findings are reported in an article [published](#) in the journal *Health Economics*.

According to the article, postponement leads to an increase in gestational age and a reduction in neonatal mortality, while earlier delivery than scheduled entails a reduction in gestational age and [birth weight](#), especially in high-risk pregnancies and at the lower end of the birth weight distribution. In net terms, the Carnival holiday increases gestational age by 0.06 days on average and reduces neonatal mortality and early neonatal mortality by 0.30 and 0.26 per 1,000 live births respectively.

The study was conducted by Carolina Melo and Naercio Menezes Filho, both of whom are economists and professors at INSPER.

"Our study shows that delivery dates are extensively manipulated in the vicinity of the Carnival holiday. This is done by rescheduling C-sections, and mainly involves less vulnerable women with higher levels of schooling," Melo said.

Women with higher levels of educational attainment tend to move delivery up in order to avoid the holiday, she explained, adding that this decision, which prioritizes the convenience of both mother and obstetrician, artificially shortens the pregnancy and may put the baby at risk.

"If, for some reason, a delivery can't be moved up by scheduling a C-section, the mother waits a bit longer, often going into labor naturally and having a vaginal delivery. Our analysis shows this can lead to better outcomes in terms of gestational maturity and neonatal survival," Melo said, noting that a net increase of 3.5 days in gestation for births with manipulated dates can lead to a gain of 60 g in birth weight.

In fact, given that deliveries both brought forward and postponed are included in the calculations, the positive effects on [gestational age](#) and birth weight are probably greater in the case of postponements, she added.

If postponement of deliveries because of a holiday can affect such an extreme indicator as [neonatal mortality](#), she continued, it is probable that many births occur very early, owing to these decisions to move up elective C-sections, and that babies are born with worse health than would be the case if pregnancies were extended.

In totally private Brazilian hospitals, which do not take patients paid for by the SUS (Sistema Único de Saúde, the [national health service](#)), 86% of deliveries are by C-section, Melo said, compared with an overall average of 55%, which is already very high. The World Health Organization (WHO) recommends at most 15%. Brazil, with 55%, ranks second in the world, after the Dominican Republic (58.1%).

Although the study focused on the Carnival period, Melo believes the tendency to opt for an earlier [delivery](#) is general and not confined to holidays. "The WHO recommends at least 39 weeks for a healthy pregnancy. The Brazilian average is 38.5 weeks. Many deliveries are preterm, too early from the safety standpoint," she said.

The authors of the article stress the need for [public policy](#) to limit preterm deliveries without medical justification in order to minimize the

risks associated with premature birth and low birth weight.

More information: Carolina Melo et al, The effect of birth timing manipulation around carnival on birth indicators in Brazil, *Health Economics* (2024). [DOI: 10.1002/hec.4858](https://doi.org/10.1002/hec.4858)

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