

Pre-eclampsia poses cerebral palsy risk for premature and small babies

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Exposure to pre-eclampsia is associated with an increased risk of cerebral palsy in newborns, if they are preterm or small at birth, suggests a study published today in *BMJ*.

Pre-eclampsia affects 3-5% of [pregnant women](#) and can lead to preterm delivery, prematurity, perinatal morbidity and mortality. Although preterm birth and low birth weight are associated with excess risk of CP, the causes remain largely unknown.

Some studies have found an excess risk of CP in children born at term from mothers with pre-eclampsia while others have reported no association.

Researchers from Norway therefore tested the hypothesis that pre-eclampsia poses a risk of CP in preterm and [small babies](#). This is the first study to report that the association between pre-eclampsia exposure and CP may be mediated by being small at birth.

Data were used from the CP Registry of Norway (CPRN) and the Medical Birth Registry of Norway (MBRN). Data were taken on all [singleton births](#) in Norway between 1996 and 2006. The researchers consider the study group to be representative of the total CP population born in Norway in this time period.

The final study population included 849 children with CP and 616,658 children without. All children with CP had their diagnosis confirmed when they were at least four years old and cases were diagnosed and classified according to the Surveillance and CP in Europe guidelines.

Duration of pregnancy was divided into: term birth (more than 36 weeks), moderate preterm birth (32-36 weeks) and very preterm birth (less than 31 weeks). Rates were adjusted for mother's age at delivery, infant sex, birth weight and if the child

was born through IVF (in vitro [fertilisation](#)).

Children who were both born moderately preterm (between 32 and 36 weeks) and very preterm (less than 31 weeks) and exposed to pre-eclampsia had a significantly increased risk of CP, if they were also smaller than usual at birth. Results did not change by adjusting for [maternal age](#), parity, smoking in pregnancy, IVF or sex of the child.

Among children born at term, exposed children born at normal weight did not have excess risk of CP.

The researchers conclude that "exposure to pre-eclampsia was associated with an increased risk of CP [...] and this was also increased in children born small for gestational age". They add that as delivery of a pre-eclamptic pregnancy is mostly related to the health of the mother or severe growth restriction, early signs of a smaller than average baby should be taken into account. They say further studies are warranted.

In a video abstract, authors Kirstin Melheim Strand and Torstein Vik explain that pre-eclampsia and low birth weight are important risk factors for [cerebral palsy](#). They conclude that they "found that pre-eclampsia is a risk factor for cerebral palsy mainly mediated through pre-term birth and [low birth weight](#)" and that they found "no direct effect of pre-eclampsia on the risk of cerebral palsy".

More information:

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