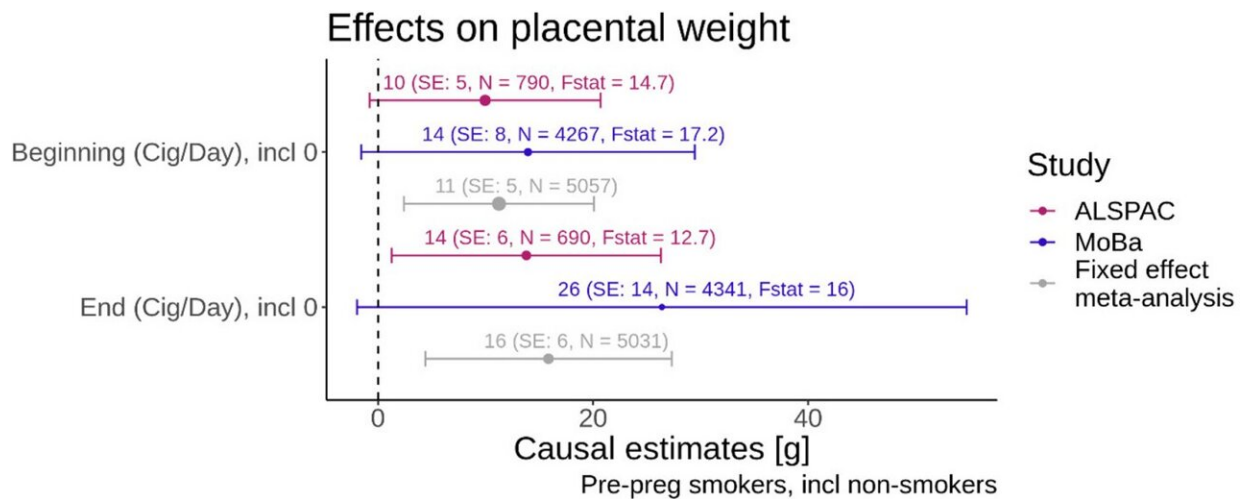


Quitting smoking during pregnancy may have a positive effect on placental weight

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Forest plot with smoking quantity variables on the y-axis and the causal estimate from the MR with placental weight as the outcome on the x-axis. The colors indicate the results for the different studies and the fixed effect meta-analysis.

Credit: *BMC Pregnancy and Childbirth* (2024). DOI: 10.1186/s12884-024-06431-0

A new study from the University of Bergen and the University of Exeter shows that pregnant women who quit smoking may prevent an abnormal mismatch between the weight of the placenta and the growth of the fetus.

The researchers in Bergen and Exeter used data from the Norwegian

Mother, Father and Child Cohort Study (MoBa) and a similar study in the U.K., the Avon Longitudinal Study of Parents and Children (ALSPAC), to investigate the relationship between [smoking](#) and placental weight.

The aim was to determine to what extent expectant mothers who quit smoking could impact the weight of the [placenta](#) at the time of birth. [The study](#) was recently published in the journal *BMC Pregnancy and Childbirth*.

Previous research has demonstrated a clear relationship between smoking and reduced [birth weight](#) in offspring, likely due to impaired placental function resulting from smoking. However, whether smoking affects the weight of the placenta was controversial and debated among specialists.

Heavier placenta and fetal vulnerability

The researchers used genetic analyses to solve this enigma and found increased placental weight in women who continued to smoke throughout pregnancy compared to those who quit smoking. The study revealed that the placenta increased by 182 g for mothers smoking in the first trimester and 202 g for those smoking until the end of pregnancy.

But while a large placenta is usually associated with [healthy pregnancy](#), the researchers found that smoking was causing a lower birth weight relative to the weight of the placenta.

This mismatch may be a sign of an increased vulnerability for the fetus and suggests that the placenta tries to compensate for the harmful effect of smoking by increasing its weight to match the demands of the fetus.

Quitting helps restore the balance

Cathrine Ebbing is Professor at the Department of Clinical Science, UiB, and fetal medicine specialist at Haukeland University Hospital. She did not directly participate in the study and provides her expert commentary. "A malfunctioning placenta leading to growth restriction of the fetus is dangerous and can cause long-term health consequences for the mother and child.

"The study by our colleagues in Bergen and Exeter is remarkable as it provides strong causal evidence that smoking is directly harmful to the development of the placenta. It is also encouraging and motivating as it shows that quitting smoking during pregnancy has a direct positive effect on the balance between placental weight and birthweight, with possible effects on the health of both mother and child."

More information: Annika Jaitner et al, Smoking during pregnancy and its effect on placental weight: a Mendelian randomization study, *BMC Pregnancy and Childbirth* (2024). [DOI: 10.1186/s12884-024-06431-0](https://doi.org/10.1186/s12884-024-06431-0)

Provided by University of Bergen

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